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ABSTRACT

The observational study investigated the process of mainstreaming 32 learning handicapped children (grades 4-5) into regular education programs. Ss were enrolled in special day classes and mainstreamed for approximately one hour per day. Systematic observations focused on the handicapped student, nonhandicapped students, and the regular class teacher. Additional data were obtained from teacher questionnaires and interviews with students and teachers. Findings suggested that certain instructional practices are related to student academic involvement, student social interactions, and student attitudes toward the class. The types of instructional practices associated with student academic involvement reflected a direct teaching method in which the teacher presented information, questioned students, and provided supportive feedback. Handicapped students reported more positive attitudes toward the class when they were more academically involved in the instructional tasks of the classroom. Mainstreaming programs that facilitated students' academic involvement and social integration on the school playground were identified. It was also concluded that the effectiveness of a mainstreaming program can be facilitated when principals provided specific kinds of administrative support. Regular education teachers were able to incorporate the handicapped student into the class instruction without decreasing the amount of time spent in academic instruction, for when the handicapped student was in the regular education classroom, the teacher and low achieving students spent more time in academic tasks than when the handicapped student was not in the room. Contrary to teacher expectation research indicating that teachers shun the lower achieving students and spend more time with higher achieving students, the teachers in this sample interacted more often with the handicapped student than with high and medium achieving students. (Author/CL)

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THE TEACHING AND LEARNING ENVIRONMENT OF MAINSTREAMED CLASSROOMS

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Final Report

November 1981

Prepared for:

Office of Special Education
Department of Education
Washington, D.C. 20208

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THE TEACHING AND LEARNING ENVIRONMENT OF MAINSTREAMED CLASSROOMS

Final Report

November 1981

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Office of Special Education
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ABSTRACT

This observational study investigated the process of mainstreaming handicapped children into regular education programs. Four objectives were defined:

1. To identify instructional practices related to the behavior and attitudes of handicapped students;

2. To identify program structures and administrative practices related to effective mainstreaming;

3. To determine how well regular education teachers minimize disruptions and effectively integrate the handicapped student into classroom instruction;

4. To obtain information useful in increasing teacher awareness of differences between the behavior of handicapped students and that of nonhandicapped students, and to determine whether teachers interact differently with the two types of students.

The sample consisted of thirty-two students enrolled in special day classes and mainstreamed for approximately one hour per day. Systematic observations were focused in turn on the handicapped student, nonhandicapped students, and the regular education teacher over a six-month period. Additional data were obtained from teacher questionnaires, teacher interviews, and student interviews.

The findings suggest that certain instructional practices are related to student academic involvement, student social interactions, and student attitude toward the class. The types of instructional practices associated with student academic involvement reflected a direct teaching method in which the teacher presented information, questioned students, and provided supportive feedback. Handicapped students reported more positive attitudes toward the class when they were more academically involved in the instructional tasks of the classroom.

Mainstreaming programs that facilitated students' academic involvement and social integration on the school playground were identified. It was also concluded that the effectiveness of a mainstreaming program can be facilitated when principals provided specified kinds of administrative support.

Regular education teachers were able to incorporate the handicapped student into the class instruction without decreasing the amount of time spent in academic instruction, for when the handicapped student was in the regular education classroom, the teacher and low-achieving students spent more time in academic tasks than when the handicapped student was not in the room. Contrary to teacher expectation research indicating that teachers tend to shun the lower achieving students and spend more time with higher achieving students, the teachers in this sample interacted more often with the handicapped student than with the high- and medium-achieving students.

The findings report instructional practices that will be helpful to regular education teachers and principals seeking to improve the mainstreaming process at their schools. Regular education teachers should be encouraged by the findings that such teachers are able to remain task oriented when the handicapped student is in the room and can spend at least proportionate amounts of time with the handicapped students without disadvantage to the regular instructional program.

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I INTRODUCTION

Since the enactment of Public Law 94-142, policymakers and educators have wanted to know how best to carry out the mandate that all handicapped children be educated in the least restrictive environment. Depending on the student's needs, different approaches are used to carry out the mandate. This report investigates the effectiveness of one approach to implementing PL 94-142--placing handicapped students in regular education classes for part of the school day (mainstreaming). Specifically, this study examines mainstreaming at the classroom level and describes instructional practices related to beneficial mainstreaming experiences.

Placing handicapped children in regular classrooms for part of the day is intended to benefit both handicapped and nonhandicapped students. For example, peer influences are expected to help the handicapped student develop appropriate social skills. In addition, the regular teacher is expected to help the handicapped student acquire behavior necessary for learning in large groups. Finally, the nonhandicapped student is expected to develop an understanding of, and a positive attitude toward, handicapped students.

These expected benefits assume that the regular classroom teachers will have the knowledge and skills needed to implement an effective mainstreaming in their classrooms. Teacher reports suggest otherwise. In a previous SRI study (Stallings, et al, 1979), regular education teachers reported that they felt inadequate when working with mainstreamed handicapped students. These teachers felt they needed explicit information about instructional practices conducive to handicapped students' desirable classroom behavior and attitudes. Teachers often reported that much of the time normally used for academic instruction was spent in procedural matters such as explaining

assignments and distributing materials when the handicapped student was in the room. Thus, nonhandicapped students received less instructional time. The teachers wanted to know how to minimize disruptions of academic instruction in mainstreaming situations.

Also in the previous study, school principals reported a need for information about administrative practices appropriate for helping the classroom teachers provide an effective mainstreaming environment. Principals expressed concern about the type of program structure--one that they could provide--that would help the classroom teachers. They were specifically concerned with identifying the types of instructional settings that might help to facilitate mainstreaming. Principals also needed information about the relationship between classroom characteristics, such as the number of mainstreamed students in the room, and the teacher's ability to teach effectively.

Purpose of This Study

To provide the necessary information for teachers and principals, this project carried out research in mainstreamed classrooms. For teachers, this research identified instructional practices related to students' behavior and attitudes and examined the disruption of academic instruction in classrooms with handicapped students. Also, the project examined teachers' attitudes and the frequency of communication between regular and special education teachers. For principals, the project investigated administrative issues related to classroom processes, such as program structure, class size, and number of handicapped students in the classroom.

Research Objectives and Questions

To provide the above information to teachers and principals, the investigators first identified research objectives and questions related to each objective. The objectives and questions are listed in Exhibit 1.

Objective 1 relates to classroom teachers. Objective 2 relates to the concerns of principals. Objectives 3 and 4 relate to differences between handicapped and nonhandicapped students in the classroom.

Overview of the Report

This report contains four additional chapters:

Chapter II	Development of the Research Model
Chapter III	Method of Approach
Chapter IV	Analysis and Results
Chapter V	Summary of Findings and Recommendations

Chapter II reviews related research and presents a conceptual model that guided this investigation. Chapter III presents the study design, sample, data collection procedures, and research variables. In Chapter IV the analysis and results for each research question are presented. Chapter V presents the summary of findings and recommendations for classroom teachers and principals.

Exhibit 1

OBJECTIVES AND RESEARCH QUESTIONS

Objective	Research Questions
1 To identify instructional practices related to the behavior and attitudes of handicapped students.	1.1 How do instructional practices relate to the handicapped student's behavior in the classroom?
	1.2 How do instructional practices relate to the handicapped student's attitude?
2 To identify program structures and administrative practices related to effective mainstreaming.	2.1 Is the type of program structure related to instructional practices and student behavior?
	2.2 Is the type of program structure related to student attitudes?
	2.3 Is program structure related to the communication between regular and special education teachers?
	2.4 Is program structure related to the teachers' attitudes toward mainstreaming?
	2.5 Is class size related to student behavior?
	2.6 Is the number of handicapped students in the classroom related to student behavior?

Exhibit 1 (concluded)

3	To determine how well regular education teachers minimize disruptions and effectively integrate the handicapped student into classroom instruction.	3.1	Do the instructional practices that occur when the handicapped student is in the regular classroom differ from those that occur when the handicapped student is not in the regular classroom?
		3.2	Does nonhandicapped students' behavior that occurs when the handicapped student is in the regular classroom differ from that which occurs when the handicapped student is not in the regular classroom?
4	To obtain information useful in increasing teacher awareness of differences between the behavior of handicapped students and that of nonhandicapped students, and to determine whether teachers interact differently with the two types of students.	4.1	How does the handicapped students' behavior compare with that of the regular education students?
		4.2	Does the handicapped students' behavior in the regular classroom differ from that in the special education class?
		4.3	Do teachers interact differently with nonhandicapped and handicapped students?
		4.4	Are teachers' attitudes related to the instructional practices that they use with the handicapped student?

II RELATED RESEARCH AND RESEARCH MODEL

This chapter discusses research findings relevant to the study objectives, and presents a model used to guide the research for identifying effective instructional practices.

Related Research

This discussion is organized by the study objectives, and presents a summary of research findings related to each objective.

Objective 1: Identification of Instructional Practices Related to Handicapped Students' Behavior and Attitudes

We found no studies that specifically related instructional practices to handicapped students' behavior or attitudes; however, on the basis of general studies of instruction, we were able to define the appropriate measure of instructional practices. Two types of measures are available when measuring instructional practices. One type would measure all instructional practices to which the student was exposed, whether on a one-to-one basis or as part of a group. The other type would measure only instruction directed to the handicapped student on a one-to-one basis. The research we reviewed indicates that individual students receive one-to-one instruction for only a small percentage of class time and receive group instruction for a much larger percentage of the time. Therefore, the measure of group-focused instructional practices provides a more appropriate measure.

Objective 2: Identification of Program Structure and Administrative Decisions Related to Effective Mainstreaming

For this objective, research related to program structure, staff communication, and teacher attitudes was identified.

Program Structure

Guerin and Szathocky (1974) investigated differences in student behavior and staff communication in four types of mainstreaming programs established to integrate mildly retarded students into the regular classroom setting. The four programs were:

Program 1, in which special education students are assigned to a special day class and are sent to the regular classroom for specific blocks of time;

Program 2, in which special education students are enrolled in small-sized regular classrooms, and special materials and aides are provided to assist the special education students;

Program 3, in which the special education program functions as a formal resource center, and special education students placed in regular classrooms enter the resource center for evaluations, prescriptive planning, and instructions; and

Program 4, in which the special education students are part of the regular classroom and are seen by a special education teacher for supplementary instruction, often of a tutorial nature.

Results indicated that the general behavior of the special education pupils in these programs was nearly identical to that of their regular classmates and that more desirable behavior was found among pupils placed in the regular classroom for most of the school day (Program 4).

The study also investigated the relationship between administrative support and effective mainstreaming. The results indicate that a strong positive attitude toward mainstreaming on the part of the central

administration is critical to the creation and maintenance of the program. Building-level support from the principal was important and, in some instances, essential to the success of the mainstreaming program.

Student integration into the school environment was also assessed. The results indicate that the type of program was related to the students' level of integration. In the present study, students were asked to report the degree to which they were integrated on the school playground.

Communication between Special and Regular Educators

A longitudinal study (Stearns, 1980) utilized case study methodology to examine the process of implementing PL 94-142 in 22 local education agenices. Several factors facilitated mainstreaming of handicapped students into regular classroom environment:

- A supportive principal.
- A good working relationship between special and regular education teachers.
- Aides and assistances to support regular teachers.
- Personnel who work with both special and regular education teachers to ensure a coordinated program for individual children.

Results from the second year of the same study (Wright, 1980) indicated that mainstreaming also was facilitated by a number of school-level strategies for monitoring students' progress in regular classrooms and for keeping open the channels of communication between special and regular educators. These monitoring techniques included having notebooks passed between regular and special teachers to keep track of student progress and behavior and using individual student assignment sheets.

The results indicated that a certain degree of school-level structure facilitates communication between special and regular educators, and we formulated research questions regarding program structure and communication to provide additional information about this relationship.

Teacher Attitudes

Guerin and Szatlocky (1974) investigated the relationship between school-level factors and teachers' attitudes toward mainstreaming. The attitude of the special education teacher in a school appeared to be a crucial determiner of the regular teachers' reactions to mainstreaming.

We found no research on the class size of the mainstreamed classroom or the number of handicapped students in the room.

Objective 3: The Degree to Which the Regular Education Teachers Are Able to Minimize Disruptions

We found no studies that compared the amount of class time devoted to academic instruction when the handicapped student is in the mainstreamed classroom with that when the student is not in the room.

Objective 4: Identification of Differences between the Behavior of Handicapped and Nonhandicapped Students and Differences in Teacher Interactions with the Two Types of Students

Several studies investigated the differences between regular and special education classrooms. Thus Bryan (1974) investigated differences between regular and special education students in the mainstreamed

classroom. He found that learning-disabled and regular students did not differ significantly in the total proportion of time they spent interacting with teachers in the regular education classroom. But, regular educators were almost three times more likely to respond to the verbal initiations of the nonhandicapped students than to those of the handicapped students. About one-half of the time spent with the handicapped students was devoted to providing individual help, but only one-quarter of the time spent with the nonhandicapped student was used for individual assistance. The two groups of students did not differ significantly in the amount of positive and negative reinforcement received from the teacher.

Bryan (1974) also investigated whether the behavior of learning disabled children in the regular classroom differed from their behavior in sessions with the learning disability specialists. For the learning disabled students, the ratio of task-oriented to nontask-oriented behavior was higher in the special education setting than in the regular elementary classroom.

Kaufman, Agard, and Semmel (cited in Gottlieb & Leyser, 1981) observed 150 special education classes and 400 mainstreamed classes. Both similarities and differences were found between the instructional patterns of the two kinds of classrooms. Regular and special education teachers asked similar numbers of questions. Pupils in regular classes interacted with the teacher about as often as did students in self-contained classes (27.8% and 26.5% of the time, respectively). Regular and special education students interacted with other students equally often (5.3% and 5.2% of the observations, respectively). Most likely, the differences between the two types of classroom environments were related to the class size. That is, regular educators taught in large groups more often than did special educators. Regular educators spent 12.0% of their time providing individual instruction, while special educators spent 26.7% of their time in this way.

An observational study of classroom interactions conducted by Stroud (1978) yielded results similar to those of Kaufman, et al. (in press). That is, special and regular education classes appeared to be more alike than different. The study found few significant differences between regular and special class instructional practices. Educable mentally retarded students in regular classes were treated in about the same way as regular students. In both settings, the classes stayed on-task over 95% of the time, and most of the activity was learning-oriented rather than managerial.

The research reviewed suggests that when handicapped students are in the regular education classroom, their behavior does not differ significantly from that of the nonhandicapped student. Conflicting results are reported regarding the regular education teacher's interactions with the two groups of students. Kaufman, et al. (in press) reported that the two groups of students were treated in about the same way, while Bryan (1974) reported that teachers were more likely to respond to the verbal initiations of nonhandicapped students than to those of handicapped students.

One possible explanation of these conflicting results is that both studies neglected to identify the achievement level of the nonhandicapped students. Previous research indicated that teachers often interact differently with students of different achievement levels. Therefore, aggregating nonhandicapped students, regardless of achievement level, may not be appropriate in addressing this question. In the present study, all questions related to nonhandicapped students will identify the students by achievement level, that is, high, medium, and low.

Previous research also revealed differences in the instructional practices of regular and special education teachers. Most of the differences would be expected for they are related to the class size of the two kinds of classrooms. The important question is whether differences are to be found between the special education students' academic involvement in the regular education classroom and in the special education classroom. This question was investigated in the present study.

Summary of Related Research

A review of the literature did not identify research on the relationship between instruction practices and the behavior of the handicapped student. The related literature did reveal that the appropriate measure of instructional practices should be all instructional practices of the teacher whether directed to individual students or group-focused.

Research was identified indicating that program structure might be related to student behavior in the classroom and integration into the school environment. Two studies indicated that teacher attitudes and staff communication might be influenced by school-level factors. The present research formulated questions concerning the relationship between program structure and (a) teacher attitudes, (b) staff communication, (c) student classroom behavior, (d) student attitudes, and (e) instructional practices.

No research was identified on the relationships between student behavior, class size, and the number of handicapped students in the room. These relationships will be investigated in the present study.

No research compared the instruction of the regular classroom when the handicapped student was in the room with that which occurred when the handicapped student was not in the room. Regular educators report that mainstreamed handicapped students disrupt the academic instruction of the classroom. Research is needed to confirm or refute these grievances of the regular educators. The present research formulated two questions related to this issue.

Research on the classroom behavior of handicapped and nonhandicapped students yielded conflicting results. To obtain more precise information regarding the nonhandicapped students, this study will identify nonhandicapped students by their achievement level.

Several studies revealed differences in the instructional practices used in regular and special education classrooms. While these results are interesting, they would be expected since the class size of the two kinds of classrooms are different. The research question that should be addressed is the degree to which the special education student is involved in classroom instruction while in the regular classroom as compared to his or her involvement while in the special education classroom. This comparison will provide information about the student's ability to adjust to a different classroom, different teacher, different students, and different instructional practices.

The review of the related research helped to identify specific issues that previous research had not addressed. Identifying these issues helped us to identify the variables to be used in addressing the research questions of this study. We next needed to develop a conceptual model that would guide the investigation of our research questions.

Research Model

Because this study focused on instructional practices occurring in the classroom, we used the model developed by Mitzel (1960) that has guided much previous classroom research. Mitzel, and later Dunkin and Biddle (1974), classified four kinds of variables involved in classroom research: presage, context, process and product. Presage variables bear upon certain teacher characteristics such as age, sex, attitudes, and training experiences. Context variables identify the context within which instruction takes place, such as students' entry achievement level, class size, and school characteristics. Process variables describe what goes on in the teaching-learning environment: the interactions and activities of teachers and students. Product variables deal with specified outcomes of the teaching-learning environment, including students' achievement gain and attitudes.

Research using this model would attempt to identify the relationship between a variable in one category and a variable in another category. For example, one can investigate the relationship between teacher high-level questioning (a process variable) and students' gain in problem-solving skills (a product variable). Another investigation may deal with the relationship between teacher behavior (a process variable) and the class size (a context variable). The relationship between variables within one category may also be investigated, such a study would deal with, for example, the relationship between teacher age and teacher attitude, both presage variables.

For the present research, after the variables needed to address each research question had been identified, each was placed into one of the four categories: presage, context, process, and product. Figure 1 shows the variables in each category. It should be noted that students' behavior usually is considered a process variable, rather than a product variable; however, a desired outcome for many handicapped students is to learn appropriate classroom behavior. Therefore, in this study, student behavior was considered an outcome measure. The arrows shown in Figure 1 indicate the relationships to be investigated, as specified in our research questions.

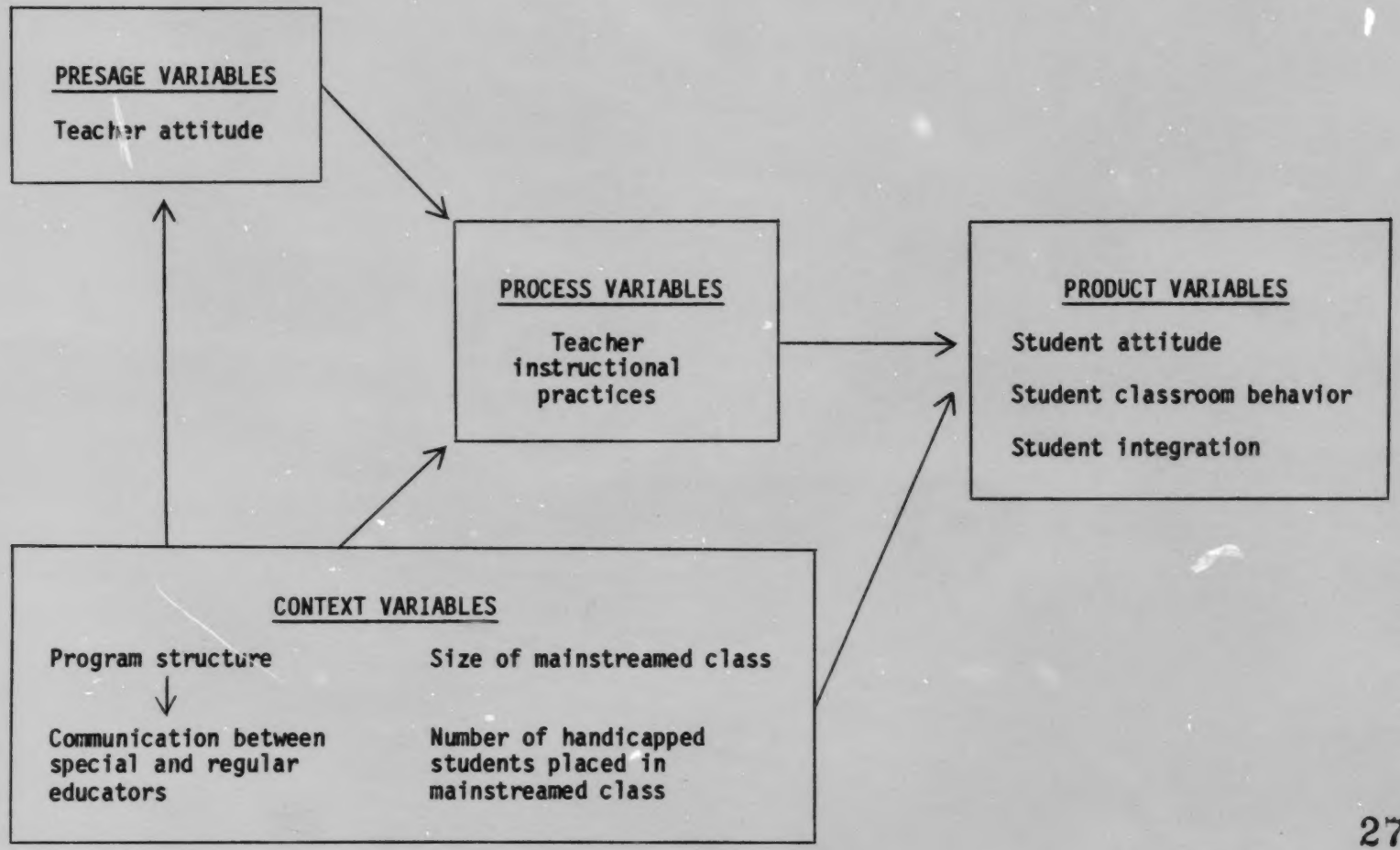

Figure 1. Model for Investigating Mainstreamed Classrooms

III METHOD OF APPROACH

This section describes the design of the study, the sample, data collection procedures, and the research variables. The instruments used in the data collection are also described.

Design of the Study

A correlational study was carried out to answer the study questions. These research questions investigated some of the relationships between the four kinds of variables identified in the model (see Figure 1): teacher characteristics, school and class characteristics, instructional practices, and student outcomes.

The major data collection effort was devoted to classroom observations. These observations provided measures of teaching practices and student behaviors, and were conducted at systematic intervals over a 6-month period. Thirty-two students enrolled in special day classes and mainstreamed for academic instruction for approximately one hour per day were identified for the sample. Over the 6-month period, these students were observed in both classroom settings (i.e., special day classes and regular education classes). Regular education teachers and students also were observed over the same period, both when the handicapped student was in the room and when the student was not in the room. Regular education teachers completed questionnaires, and special education teachers were interviewed. All handicapped students were interviewed.

The Sample

Handicapped Students

The study sample consisted of 32 special education students. All 32 students had placements in learning handicapped (LH) special day class settings. In addition, each student spent a portion of the school day mainstreamed into a regular classroom for academic instruction. For the purpose of the study, we defined academic instruction as classroom instruction concerned with reading, mathematics, science, or social studies. Each student was mainstreamed for one class period of approximately one hour.

The special education students were 4th and 5th grade students according to their chronological age and years in school. There were 8 females and 24 males. The students, selected from two counties in northern California, represented nine school districts and 13 schools. Table 1 describes the student sample by sex, county, district, school, mainstream subject, size of special day class, size of regular class, and number of special education students mainstreamed in the regular classroom. Three students moved out of their respective school districts and were dropped from the sample. The demographic characteristics of each school district are included in Appendix A.

Teachers

When the sample of handicapped students was identified, the sample of teachers was self-evident; the teacher sample was composed of both the special education teacher and the regular education teacher for each handicapped student.

Table 1

STUDENT SAMPLE

Student	Sex	County	District	School***	Subject	Size of Special Day Class	Size of Regular Class	No. of Special Education Students in Regular Class*
01	F	1	A	Lowell Elem.	Math	12	27	1
02	M	1	A	Lowell Elem.	Math	12	27	1
03	M	2	E	Woodside Elem.	Social Studies/ Science	13	31	2
04	M	2	E	Woodside Elem.	Social Studies/ Science	13	36	2
05	F	2	E	Woodside Elem.	Social Studies/ Science	13	36	2
06	M	2	E	Woodside Elem.	Social Studies/ Science	13	30	3
07	M	2	E	Woodside Elem.	Social Studies/ Science	13	30	3
08	M	2	E	Woodside Elem.	Social Studies/ Science	13	30	3
09	M	2	F	Byron Elem.	Math	10	30	1
10	F	2	F	Byron Elem.	Math	13	30	2
11	F	2	F	Byron Elem.	Science	13	30	2
12	F	1	B	John Glenn Mid.	Reading	13	34	4
13	M	1	B	John Glenn Mid.	Reading	13	34	1
14	M	1	B	John Glenn Mid.	Reading	13	33	1
15	F	1	B	John Glenn Mid.	Reading	13	32	5
16	F	1	C	Hillview Elem.	Reading	10	18	2
17**	M	2	G	Longfellow Elem.	Math			
18**	M	2	G	Longfellow Elem.	Math			
19	M	1	D	Payne Elem.	Reading	14	28	2
20	M	1	D	Payne Elem.	Math	14	28	2
21	M	1	D	Payne Elem.	Reading	13	29	3
22	M	1	D	Payne Elem.	Reading	13	29	3
23	M	2	H	Steele Elem.	Social Studies	12	29	1
24	M	2	H	Steele Elem.	Math	12	31	1
25	F	2	H	Washington Elem.	Math	11	28	2
26**	M	2	H	Washington Elem.	Math			
27	M	2	H	Washington Elem.	Science	11	32	1
28	M	2	H	Sierra	Reading	12	28	2
29	M	2	H	Madison	Math	11	29	1
30	M	2	I	Hillcrest	Reading	12	30	2
31	M	2	I	Hillcrest	Reading	12	30	2
32	M	2	I	Hillcrest	Reading	12	24	1

*These numbers include all Special Education students, including those enrolled in a special day class who are mainstreamed for at least one subject and those enrolled in regular education who attend a resource room for at least one subject.

**Moved ***To assure confidentiality, fictitious names are used.

Nonhandicapped Students

So that teaching practices directed toward handicapped students could be compared with practices directed toward nonhandicapped students, nonhandicapped students also were selected for observation. These observations also permitted comparison of the behavior of handicapped and nonhandicapped students.

Three students were selected from each regular classroom, based on their level of achievement. The high-, medium-, and low-achieving students were selected on the basis of their scores on the district's standardized achievement tests. The three levels of achievement were defined as follows:

- Low achievement: lower than the 40th percentile rank
- Medium achievement: between the 40th and 60th percentile rank
- High achievement: higher than the 60th percentile rank.

Teachers were asked to select one student at random from each of these three groups for the focus of the observations. These students were to be of the same sex as the mainstreamed student; that is, if the mainstreamed student was a boy, all three nonhandicapped students were boys. Selecting students of the same sex helped to control for any sex differences in student behavior or teacher interaction with the student.

Sample Selection Procedures

The selection process followed a protocol of approaching personnel at varying administrative levels within the educational system. Each step involved gaining the support and cooperation of significant individuals within a specific educational department. The process began with meetings with the county special education administrators, followed by meetings with district special education directors within that county. The last group

approached included principals and then special and regular education teachers at schools within the district. A detailed description of the sample selection procedures is included in Appendix A.

Sample Limitation

Our final sample was complete on November 1, 1980. A limitation of the final sample is that it includes only teachers who volunteered to participate in this study, rather than being selected by random sampling procedures. On the basis of our discussions with teachers during the orientation meetings, however, we believe that those teachers who were willing to participate in our study represented a wide range of attitudes toward mainstreaming; that is, their attitudes ranged from positive to negative. In this important sense, at least, reliance on volunteers did not result in a sample of teachers who were excessively homogeneous and presumably nonrepresentative.

Instruments

To identify the teaching practices occurring in the classroom, the SRI Observation Instrument was adapted for this study. The same observation system, with appropriate modifications, also was used to identify individual student behaviors. This instrument provided quantitative data about the classroom practices and student behaviors.

To assess the attitudes and skills of the regular education teachers, a teacher questionnaire was developed. Interviews, conducted with all special education teachers, provided information about the mainstreaming program at each participating school. All handicapped students in the sample also were interviewed and were administered a questionnaire measuring their attitudes toward the regular classroom and toward their peers. All of the instruments are presented in Appendices B and C.

SRI Observation Instrument

The SRI Observation Instrument (SOI) has been used in previous SRI studies in day care centers, elementary school classrooms, and secondary school classes. To address the research questions in this study, some modifications were made in the instrument.

The SOI provides a record of instructional and social activities that occur in the classroom. It records interactions between teachers and students as well as between students and other students. The observer focuses on a specific individual and records all persons with whom he or she interacts.

The SOI used in this study contains three sections. The first section, Identification Information, identifies the schools, teachers, and students. The second section, Classroom Summary Information, records the number of students enrolled in the class, the number of handicapped students mainstreamed into the class, and the number of adults in the room.

The third section, the Five Minute Interaction (FMI), is used to record the teachers' or students' verbal interactions and nonverbal behaviors. It consists of a series of frames in which each behavior interaction is recorded in the four categories provided: Who, To Whom, What, and How. It shows WHO initiates an action, TO WHOM, WHAT is the type of action, and HOW the action is carried out. Consecutive frames can record continuous actions and interactions. The observer training manual identifies the codes used in each FMI frame. A copy of the manual is included in Appendix B.

Each observation booklet has one Identification Information and Classroom Summary Information form and five FMIs. The FMIs are completed at equal intervals during a specified time. For example, if the observation period is 60 minutes, the observer will record one FMI at each 12-minute interval throughout the 60 minutes.

Teacher Questionnaire

The teacher questionnaire was developed to address some of the major research questions regarding teachers' attitudes and the frequency of communication between special and regular educators. A copy of the questionnaire is included in Appendix C.

Teacher Interview

Interviews were conducted with the special education teacher at each school. These interviews gathered systematic data about the mainstreaming program at each of the participating schools. The topics pursued during the interviews included:

- Mainstreaming decisionmaking process
- Procedures followed to implement mainstreaming
- Follow-up procedures used to monitor and evaluate mainstreaming.

Interviews were conducted by either the project leader or a research analyst.

Student Interviews and Questionnaire

All handicapped students in the sample were interviewed individually. During the interview, the student was asked questions about what he or she did at recess and lunch time, what activities he or she was involved in, and with whom he or she spent his or her time.

Students were also administered a section of the Purdue Social Attitude Scale (Cicirelli, 1975). This attitude scale contains four subscales: peers, school, family, and community. Each subscale contains eight items. Students were administered a modified version of the school subscale and four items from the peer subscale.

The school subscale measures the students' attitudes toward various classroom situations and contains eight pictures, each of which depicts a specific classroom situation. A projective technique was used, and students were asked to rate the feelings of the student in the picture. Students could select one of five faces, ranging from a smiling to a frowning face.

The classroom items were modified for this study. The words "the teacher" were deleted and the name of the specific teacher was written in for each student. Students were first shown the items with the name of their regular education teacher; later in the interview they were shown the items with the name of the special education teacher. A copy of the student questionnaire interview is included in Appendix C.

Data Collection

Observation Training

Seven people experienced in working with special education students were trained as observers. These people attended a seven-day training session conducted at SRI International. The training sessions consisted of: (1) coding video-tapes of elementary school classrooms; (2) coding in live elementary school classrooms; and (3) discussing coding problems.

To assess the trainee's competency in coding, a video-tape test was administered on the seventh day. During the test, trainees coded two types of tapes: tapes with freeze-frames inserted and tapes shown at normal speed. The trainees' coding of the freeze-frame tapes was compared to a pre-determined criterion coding. The degree to which the trainees agreed with the criterion coding was used as an assessment of each trainee's understanding of the codes. A table showing each trainee's proportion agreement with the criterion coding is shown in Appendix D. An overall agreement of 85 percent was expected for each code. This level of agreement was not reached for the following four codes: 9, X, G, and NV. Further

training was provided until the trainees displayed the acceptable level of agreement. The trainees' coding of the normal speed tapes was used as an assessment of inter-rater agreement. The observers' inter-rater agreement for the normal speed tapes was acceptable and is shown in Appendix D.

Throughout the data collection period, refresher training sessions were held at monthly intervals. In March, another coding test was administered, and the results of this test are shown in Appendix D. The March testing, indicated that observers had improved since the testing administered in the Fall.

Classroom Observations

Collection of observation data began on November 4, 1980. In each classroom, observations were scheduled for the following individuals: the regular education teacher, a handicapped student, and three nonhandicapped students (one each of high, medium, and low achievement). The teacher and each of the nonhandicapped students were observed when the handicapped student was in the room and when the student was not in the room. The handicapped student was observed in the mainstreamed class and in his or her special day class. Thus, ten types of observations were conducted to collect all the necessary data. The types of observations were identified by the following code numbers:

1.0--Regular education teacher, handicapped student in the room

2.1--High-achieving student, handicapped student in the room

2.2--Medium-achieving student, handicapped student in the room

2.3--Low-achieving student, handicapped student in the room

3.0--Handicapped student, in the regular education classroom

4.0--Regular education teacher, handicapped student not in the room

5.1--High-achieving student, handicapped student not in the room

5.2--Medium-achieving student, handicapped student not in the room

5.3--Low achieving student, handicapped student not in the room

6.0--Handicapped student, in the special day class.

To allow a valid comparison of the observation data collected when the handicapped student was in the room and when the student was not in the room, the teacher was asked to identify a time of day when a type of academic instruction was occurring that was similar to the instruction that occurred when the handicapped student was mainstreamed. All of the observations were conducted during reading, mathematics, science, or social studies instruction. Observations of the handicapped student in the special day class also were conducted during an academic instruction.

Because one of the criteria for sample selection was that the special student be mainstreamed for approximately 1 hour per day, the observations of the handicapped student and teacher were usually 1 hour in length. In a few situations, the student was mainstreamed for 45 minutes. In those situations, the student could be observed only for that period of time, but the same number of FMIs were completed as were completed for the 1-hour observations. The observer decreased the time interval between FMIs from 12 minutes to 9 minutes.

The observations for the three nonhandicapped students combined were 1 hour long, during which time the observer would complete two FMIs for each student observed. Observers were instructed to rotate their focus systematically among the three students. That is, they were asked to complete one FMI on each of the three students and then return to the first student for the second FMI, and so on. Table 2 shows the types of observations and the length of time for each.

Table 2

LENGTH OF OBSERVATION BY OBSERVATION TYPE

Observation Type	Length of Observation
1.0	one hour
2.1, 2.2, 2.3	one hour combined
3.0	one hour
4.0	one hour
5.1, 5.2, 5.3	one hour combined
6.0	one hour

To control for individual students' change in behavior across days, the two types of observations for each student were completed on the same day; i.e., the handicapped student was observed in the mainstreamed class and the special day class on the same day, and nonhandicapped students were observed with and without the presence of the handicapped student on the same day.

The completion of the ten types of observations for one mainstreamed student was referred to as an observation cycle. Three to four days were required to complete an observation cycle for one student. Observers would complete a cycle on all students before beginning a new cycle. Cycles were scheduled at approximately 3-week intervals, from November through mid May. Seven cycles were completed for most students. In a few cases, because of school schedules or teacher illness we were able to complete only six cycles.

Teacher Questionnaires

After the observations were completed, questionnaires were mailed to all participating regular and special education teachers. All teachers except one regular education teacher returned the questionnaires.

Teacher Interviews

During late May, interviews were conducted with each of the 13 special education teachers who participated in the study. The interviews were conducted by SRI project staff and lasted approximately one hour each. They were scheduled at times convenient for the teachers and usually took place after school or during the teacher's planning period. The general topics covered in the interviews were discussed in the "Instruments" section of this chapter.

Student Interviews/Questionnaires

Each mainstreamed student was administered a brief questionnaire. During the same session individual interviews also were conducted. The interview/questionnaire administration occurred during May 1981 and, in most cases took place on the same day as the teacher interviews. The student interviews were conducted by the project director and a research analyst, and lasted about 20 minutes each.

Research Variables

This section identifies the research variables formed from the four sources of data: observations, teacher questionnaires, student interview-questionnaires, and teacher interviews.

Observation Variables

Two groups of observation variables were formed: teacher variables and student variables. A list of variables is shown in Table 3. The teacher variables were formed from the data gathered during the teacher-focus observations (types 1.0 and 4.0), and reflect the teacher's behavior and instructional practices directed to groups and to individuals. The student variables were formed from data gathered during the student-focus observations (types 2.1, 2.2, 2.3, 3.0, 5.1, 5.2, 5.3, and 6.0) and reflect the student's behavior and individual instruction received from the teacher.

A percentage of total frames coded was used as the measure of each observation variable. The percentage of total frames was calculated by dividing the frequency of a specific variable within an FMI by the total number of frames coded for that FMI. For example, one FMI might shown a total of 70 coded frames and 35 of those frames indicate the same observation variable, such as teacher lecturing. The total number of frames was divided into the number of frames for the variable. For this example, the percentage score would be 50 percent. After the percentage score for each variable within an FMI was calculated, the mean percentage of a specific variable across all FMIs within an observation booklet was calculated. Next, the mean percentage score across all booklets was calculated by averaging the mean percentage for all booklets for a specific observation type for that specific focus-person.

Table 3

OBSERVATION VARIABLES

Variable Number	Variable Name
Instructional Practices - Teacher Observations	
1	Teacher interacts with mainstream student, task
2	Teacher interacts with entire class, task
3	Teacher interacts with small group, task
4	Teacher interacts with full-time student, task
5	Teacher asks questions, task
6	Teacher offers help
7	Teacher responds to student's question, task
8	Teacher lectures or explains, task
9	Teacher provides praise or acknowledgment, task
10	Teacher provides supportive corrective feedback, task
11	Teacher provides nonsupportive feedback, task
12	Teacher monitors students' seatwork
13	Teacher negative comments
14	Teacher positive comments
15	Teacher in classroom organization with students
16	Teacher socializes with students
17	Teacher in classroom organization, without students
18	Teacher academic instruction
19	Teacher behavior management

Table 3 (continued)

Variable Number	Variable Name
Student Behaviors - Teacher Observations	
20-29	No variables specified
30	Student initiates interactions, task
31	Student responds, task
32	Teacher does not respond, task
33	Student recites, task
34	Student does not respond, task
Instructional Practices - Teacher Observations	
35	Teacher interacts with individuals, task
36	Teacher praises for nonacademic behavior
Instructional Practices - Student Observations	
37	Adult asks student question, task
38	Student receives offers of help from an adult
39	Student receives responses to question from adult, task
40	Student receives explanation from adult, task
41	Student receives praise or acknowledgement from adult, task
42	Student receives praise or acknowledgment from an adult, nontask
43	All praise and acknowledgment from adult
44	Student receives supportive feedback from adult,task
45	Student receives supportive feedback from adult, task

Table 3 (continued)

Variable Number	Variable Name
46	Adult does not respond to student question
47	Student receives negative comment from adult
48	Student receives positive comment from adult
49	Student receives social comments from adult
50	Student receives explanations from adult about classroom organization
51	All academic instruction student receives from adult
52	Student receives behavior corrections from adult
53	Teacher places student at a desk or table, alone
54	Teacher places student at a table with other students
55	Teacher places student in a cooperative group
56	Teacher places student in a teacher-directed activity
Student Behaviors-Student Observations	
57	Student attends to group instruction: task
58	Student attends to group instruction or responds to commands: classroom organization
59	Student attends to group behavior corrections
60	Student attends to group interactions social
61	Student on-task. seatwork
62	Student responds to adults question or request to recite, task
63	Student initiates comment to adult, task
64	Student does not respond to adults questions or request, task
65	Student asks adult for help, task

Table 3 (concluded)

Variable Number	Variable Name
66	Student interacts with other student, task
67	Student initiates interaction with other student, social
68	Student responds to or initiates social comment to adult
69	No variable specified
70	No variable specified
71	All student off-task, noninvolved
72	All interactions with other students
73-77	No variables specified
78	All student responses, comments to adult: task
79	All student makes negative remarks to teachers, or others; all negative comments student receives from other students
80	All student makes positive remarks to teachers, other students; all positive comments student receives from other students
81	Student does not respond to adult's commands, requests or corrections: nontask
82	Student gets instructional materials organized: not involved in academic work

Using percentage and averaging the scores at each level of aggregation, rather than using average frequencies helped to control for two factors. First, observer differences in speed when coding the frames would contribute to a spurious variance among classrooms if frequencies were used. Second, in a few situations, because of unanticipated interruptions, the observer was not able to complete all FMIs for an observation period. Therefore, using percentages provided a more comparable measure of each variable across classrooms than if frequencies were used.

Teacher Questionnaire Variables

The variables formed from the teacher questionnaire are shown in Table 4. The last four variables were formed from rating scales. For these variables, the mean rating for all appropriate items was used as the measure of the variable.

Student Questionnaire-Interview Variables

The variables formed from the student questionnaire-interview were:

- Attitude toward special education class
- Attitude toward regular education class
- Attitude toward peers
- Companions during lunch
- Playmates on playground.

The first three variables were formed from the Purdue Social Attitude Scale. Eight items were used for the first two variables and four items for the third. The mean rating of all appropriate items was used as the measure of each of those three variables.

The last two variables were formed from information obtained during the student interview. Three different responses were identified for the variable concerning lunch companions: (1) special education students, only; (2) regular education students, only; and (3) both types of students. Five different responses were identified for the variable concerning playmates: (1) do nothing, alone; (2) do nothing with other special education students; (3) play with special education students; (4) play with regular education students; and (5) play with both types of students.

Table 4

TEACHER QUESTIONNAIRE VARIABLES

Variable Name	Questionnaire Item Number
Years teaching experience	1.3
Years mainstreaming experience	2.1
Total number of special education students in class	2.2 and 2.3
Class size	1.7
Attitude toward effect of mainstreaming on regular education students	2.5
Attitude toward effect of mainstreaming on special education students	2.6 and 2.7
Assessment of communication between regular and special educators	6.12
Attitude toward entrying skills mainstreamed student needs	2.10

Teacher Interview Variable

On the basis of the teacher interviews, we identified three types of program structure, which we termed "subject-based", "student-specific", and "homeroom" mainstreaming. Subject-based mainstreaming refers to mainstreaming practices driven by a school-level schedule that provides structure to facilitate the placement of handicapped students in the regular classroom. For example, in three participating schools, the student body organizes into homogeneous skill groups for reading on a daily basis. Special education students, along with regular students, receive their instruction in a group that corresponds with their skill level. Often, special education students' skills are such that they fit into a group made up of predominantly regular students. It should be noted that these special education students are not necessarily mainstreamed for their academic strength.

Student-specific mainstreaming refers to mainstreaming that originates at the student level and is driven by the individual student's strengths and social and academic needs. For example, a teacher begins the mainstreaming process when she or he determines: (1) a student is functioning near grade level in a given area or (2) a specific social goal can best be accomplished in the mainstreamed situation.

In homeroom mainstreaming, all special education students are assigned to a regular class for opening activities and lunch. This assignment is made during the summer, and students report to the regular class on the first day of school. At the beginning of each day, the special education students report to the mainstreamed class before going to their special day class. Some special education students return to the regular class during the day for academic instruction in social studies or science. They spend the remainder of their day in the special day class.

It appeared that in schools with subject-based mainstreaming, special educators are less responsible for initiating and arranging mainstreaming than in schools with student-specific programs. It also appeared that in the subject-based and homeroom programs, regular educators viewed the special education student as a class member and not a visitor, as sometimes was the case in student-specific programs. In these two programs, the regular educators were accountable for the students' learning. For these reasons, we chose to look at the data separately based on these three types of program structure.

IV ANALYSIS & RESULTS

This chapter presents the data analysis and results. The discussion is organized by each of the research questions.

Unit of Analysis

Three students in the sample moved from their respective school districts, and our final sample included 29 handicapped students and 21 regular education teachers. Seven teachers had more than one of the handicapped students in the sample mainstreamed into their classes. In six classrooms, two students were mainstreamed; in another class, three students were mainstreamed. In classrooms with more than one student, the two or three students experienced the same teacher and similar classroom environments, and the appropriate unit of analysis is the class. Therefore, in classes with more than one student, we aggregated the student data to the class level. Three different nonhandicapped students were observed for each handicapped student; in classes with more than one handicapped student, nonhandicapped student data were also aggregated to the class level. Using the class as the unit of analysis reduced the sample size to 21.

Question 1.1 - How do instructional practices relate to the handicapped student's behavior in the classroom?

Data from teacher-focus and student-focus observations were used to identify relationships between student's behavior and teaching processes. Both the student and teacher observations were conducted when the handicapped student was in the regular classroom. The teacher observation variables measure teaching processes in general, and student observation

variables measure the behavior of specific students. Because teacher and student observations were conducted at different times, the respective variables do not measure the same teaching event, but are indicators of specific student behavior and general teaching practices always measured on two different occasions.

Teacher-Focus Observation Variables

The means and standard deviations for the teacher observation variables are listed in Table 5. These means represent the percentage of total frames for which that variable was coded. Therefore, the means should total to 100 and each variable provides an estimate of the average amount of time that a teacher was engaged in a particular instructional practice. The means for certain variables (identified in Table 5 with an asterisk) indicate the distribution of total classroom time. The three student behavior variables from the adult observations are included to provide an estimate as close to 100% as possible.

Teachers spent 45% of class time in academic instruction (Variable 18). Monitoring students' seatwork (Variable 12) accounted for 5% of the time. Behavior corrections (Variable 19) and social interaction (Variable 16) accounted for 2% and 1% of the time, respectively. Student academic talk accounted for 17% (Variables 30, 31, and 33). The total of student academic talk and teacher academic instruction (Variable 18) indicates that 62% of class time was devoted to teacher-directed instruction.

Teachers were not involved with students 20% of the time (Variable 17). The total for teacher monitoring (Variable 12) and noninvolvement (Variable 17) indicates that 25% of the time teachers were not interacting with students.

Table 5

TEACHER-FOCUS OBSERVATION VARIABLES
HANDICAPPED STUDENT IN THE CLASSROOM
(N = 21 Teachers)

	Variable	$\bar{X}$	S.D.
	INSTRUCTIONAL PRACTICES		
01	Teacher interacts with mainstream student, task	.02	.01
02	Teacher interacts with entire class, task	.21	.14
03	Teacher interacts with small group of students, task	.03	.03
04	Teacher interacts with full-time students, task	.20	.08
05	Teacher asks questions, task	.08	.03
06	Teacher offers help	.001	.001
07	Teacher responds to student's question, task	.03	.01
08	Teacher lectures or explains, task	.26	.13
09	Teacher provides praise or acknowledgment, task	.04	.02
10	Teacher provides supportive corrective feedback, task	.03	.05
11	Teacher provides nonsupportive feedback, task	.004	.005
12	Teacher monitors students' seatwork	.05	.05
13	Teacher negative comments	.003	.002
14	Teacher positive comments	.007	.01
15*	Teacher in classroom organization, with students	.10	.04
16*	Teacher socializes with students	.008	.007
17*	Teacher in classroom organization, without students	.20	.09
18*	Teacher academic instruction	.45	.09
19*	Teacher behavior management	.02	.01
35	Teacher interacts with individual, task	.21	.08
36	Teacher praises for nonacademic behavior	.001	.001
53	Teacher places student at a desk or table alone	.16	.14
54	Teacher places student at a table with other students	.20	.20
55	Teacher places student in a cooperative group situation	.02	.03
56	Teacher places student in a teacher-directed activity	.56	.21
	STUDENT BEHAVIORS		
30*	Student initiates interactions, task	.05	.03
31*	Student responds, task	.10	.05
33*	Student recites, task	.02	.03

* Variables having an asterisk indicate the distribution of class time.

These figures provide an estimate of how the teachers distributed the class time. That is, 62% was devoted to teacher-directed instruction, 25% to teachers not interacting with students, and 12% to organizational and social matters.

To determine the relationship of the teaching process variables with each other, an intercorrelation matrix was formed and is included in Appendix E. The intercorrelation matrix indicates that several of the teaching processes were intercorrelated. On the basis of the intercorrelations of the variables and our conceptual understanding of the type of event each variable measured, we clustered the variables into three general dimensions: Teacher Directness, Placement of Students; and Classroom Climate. In the analysis, we retained the individual variables, however, placing the variables into one of those three clusters helped to interpret the results of this analysis.

Student-Focus Observation Variables

The student behavior variables used in this analysis are listed in Table 6. These means and standard deviations reflect the percentage of time the handicapped student was observed in academic and non-academic behavior while in the regular education classroom. The means for certain variables (identified in Table 6 with an asterisk) indicate the total distribution of classtime. Some variables can not be included in the total of classtime. Two variables are composites. Variable 72 (all interaction with other students), is a combination of Variables 66 and 67 (task and social interactions, respectively). Variable 78, (all responses and comments to adult, task), is a combination of Variables 62 and 63. Variables 79 and 80 (negative and positive interactions) could be recorded with academic, social, or organizational interactions and cannot be included in a total distribution of time.

Table 6

HANDICAPPED STUDENT-FOCUS OBSERVATION VARIABLES
STUDENT IN MAINSTREAMED CLASSROOM
(N = 21 Classrooms)

	Variable	X	S.D.
	STUDENT BEHAVIOR		
57*	Student attends to class instruction, task	.27	.18
58*	Student attends to group instruction, organization	.03	.02
59*	Student attends to group behavior corrections	.004	.006
60*	Student attends to group interactions, social	.001	.002
61*	Student on-task, seatwork	.36	.16
62	Student responds to adult's question, task	.02	.02
63	Student initiates comments to adult, task	.002	.002
64*	Student does not respond to adult's question, task	.01	.02
65*	Student asks adult for help, task	.004	.003
66	Student interacts with other students, task	.02	.02
67	Student initiates interactions with other student, social	.04	.03
68*	Student comments to adult, social	.001	.002
71*	Student off-task, noninvolved	.16	.10
72*	All interactions with other students	.06	.03
78*	All responses and comments to adult, task	.03	.02
79	Student negative interactions	.001	.001
80	Student positive interactions	.001	.002
82*	Student getting instructional materials organized	.03	.03
	INSTRUCTIONAL PRACTICES		
51*	All individual instruction from an adult	.03	.02
49*	Social comments from an adult	.001	.001
52*	Individual behavior correction from an adult	.001	.02
50*	Individual explanations from adult, organization	.003	.003

*Variables having an asterisk indicate the distribution of classtime.

Based on the mean scores, the handicapped students spent approximately 27% of the class time attending to group instruction, task (Variable 57). The teacher might have been lecturing or interacting with other students, while the handicapped student was listening. The student received individual instruction (Variable 51) approximately 3% of the time. The sum of the mean scores for Variable 51 and Variable 78 (all academic interactions responses and comments to an adults, task), indicates that student academic interactions with the adult accounted for 6% of the class time.

An intercorrelational matrix, was formed for the student behavior variables. This matrix is included in Appendix E. The student variables were grouped into clusters corresponding to the clusters developed for the teacher variables. Four clusters of student variable were identified:

- Involvement in Academic Instruction
- Social
- Organizational
- Affect.

The last three clusters correspond to the Classroom Climate cluster. The first cluster corresponds with the Teacher Directness cluster formed with the adult-focus variables.

Distribution of Class Time

Although the teachers and students were observed on different days and the two groups assume different roles within the classroom environment, a comparison of the distribution of time for the two groups reveals some interesting similarities. The classroom activities could be categorized into three general types of activities: teaching/learning activities, classroom management and socializing, and activities not involving people, or instructional material. Table 7 shows the percentage scores for both teachers and students.

Table 7

PERCENTAGE OF TIME* SPENT IN TYPES OF CLASSROOM ACTIVITIES
(N = 21 Classrooms)

Category	Teacher	Student
Teaching/learning activities	.62	.72
Classroom organization and socializing	.12	.11
Noninvolved with people or instructional materials	.25	.16
Total	.99	.99

*Rounding results in totals not equal to 100.

The percentages of the distribution of classtime indicate that handicapped students tend to spend more time in learning activities than teachers spend in teaching activities. Students' independent seatwork would account for this difference, for teachers may be involved in classroom management activities when students are working on independent seatwork. Teachers and students spend about equal time in organizational, social, and behavior management activities. Teachers are more frequently noninvolved than are students.

Relationship Between Instructional Practices and Student Behavior

A correlational matrix of teaching process variables and student behavior variables is shown in Table 8. Teacher observation variables are listed down the left side of the matrix and student observation variables are listed across the top. This matrix produced 432 correlations, 87 of which reached a level of statistical significance of .05 or less. Based on chance, we would expect 22 of the correlation coefficients to reach that level of significance. Two factors, other than true relationships between student and teacher variables, would contribute to the large number of significant correlations: (1) redundant correlations, and (2) composite variables. Several of the teacher observation variables were intercorrelated and thus, could be measuring the same type of teaching process. Student Variables 72 and 78 are composite variables and could be expected to produce similar correlations as their component variables. Therefore, the results must be interpreted with these factors in mind.

The results are discussed for each of the student clusters listed across the top of Table 8. These clusters identify student behaviors that are of concern when handicapped students are mainstreamed. Regular and special educators do not always agree about the importance of each of these behaviors. For example, some educators feel that students should learn to work independently, while others feel that students' oral participation is the more important outcome. Rather than make a judgment about the importance of each of these behaviors, we will attempt to identify the teaching processes that are related to the variables within each cluster.

Academic Behavior

On-task Passive

Students were observed attending to group instruction (Variable 57) more when the teacher spent more time interacting with the entire class,

Table 8

CORRELATIONS BETWEEN INSTRUCTIONAL PRACTICE VARIABLES AND STUDENT BEHAVIOR VARIABLES

		Student Behavior Variables																		
		Involvement in Academic Instruction									Social				Organizational			Affect	
		On-Task Passive	Oral Participation					On-Task Independent	Off-Task										
Instructional Process Variables	Variable Number	Attends Instruction	Responds	Initiates Adult	Asks Help	Interacts Students	All Responses & Comments to Adults	Seatwork	Does Not Respond	Noninvolved	Attends Social	Initiates Students	Interacts Adult	All Students	Attends Organization	Gets Ready	Attends Behavior	Negative	Positive
		57	62	63	65	66	78	61	64	71	60	67	68	72	58	82	59	79	80
Teacher Directness - Academic Task																			
Group Instruction																			
02 Interacts with entire class		.54	-.44	.37	-.47	.38	-.45	-.40	.24	.08	-.35	-.18	-.31	-.31	.30	-.32	.04	-.17	.16
03 Interacts with small group of students, task		-.24	.45	.45	.33	-.10	.45	.48	-.30	-.31	.29	.17	.32	.03	-.07	.09	.09	.17	-.05
Individual Instruction																			
01 Interacts with mainstream student, task		-.23	.25	.56	.67	.10	.28	.12	-.18	-.11	.06	.23	.61	.24	.09	.34	.34	-.19	-.06
04 Interacts with full-time student, task		.27	.26	.07	.14	.49	.26	.33	-.02	-.31	.17	.02	.04	.25	.22	.23	.23	.01	-.05
35 Interacts with individuals, task		-.31	.28	.14	-.23	.48	-.29	.33	-.07	-.01	.13	.09	.15	.30	-.21	.24	.24	-.07	-.09
Interactive Instruction																			
05 Asks questions, task		.31	.68	.37	.23	-.07	.69	.13	.40	-.61	.28	-.25	.01	-.29	.06	.09	.09	-.09	.02
06 Offers help		.48	.28	.37	.49	.19	.29	.31	.29	.07	.27	.47	.54	.42	-.30	.37	.37	.17	-.14
08 Lecture or explains, task		.41	-.58	.43	-.53	-.19	-.59	-.28	.06	.13	.34	-.15	-.41	-.16	.29	-.30	.01	-.13	.21
09 Provides praise or acknowledgement, task		.06	.09	.43	.30	.09	.59	-.08	.17	-.38	.27	.03	.30	.01	-.10	-.37	.37	-.08	-.08
10 Provides supportive corrective feedback, task		.38	.47	.37	.44	.03	.49	.20	.19	.10	.09	.25	.50	.17	.26	.24	.24	-.04	-.22
Nondirected Instruction																			
12 Monitors students' seatwork		-.35	-.14	.37	.26	-.07	-.11	.11	.41	.51	.19	.06	.06	.002	-.07	.37	.35	.22	.01
07 Responds to students' question, task		-.27	.09	.09	.01	.47	-.15	-.11	.10	.16	.09	-.05	-.08	.19	-.20	-.09	-.09	.19	-.08
Placement of Students																			
54 Places student at table with others		-.48	.25	.25	.30	.43	.34	.25	-.30	-.03	.19	.51	.46	-.03	-.49	.33	.33	.35	.12
56 Places student in teacher-directed activity		.45	-.32	.32	-.47	-.41	-.37	-.36	.47	.02	-.17	-.49	-.46	-.02	.28	-.27	-.27	-.32	-.30
55 Places student in cooperative group situation		.15	.02	.27	-.06	-.05	-.26	-.26	.06	-.03	.15	-.35	-.21	-.32	-.12	.20	.20	.15	-.11
53 Places student at desk alone		.04	-.04	.10	-.15	-.06	.19	-.04	-.15	.14	-.08	.001	-.02	.14	.29	-.16	-.16	-.01	.09
Classroom Climate																			
11 Provides nonsupportive feedback, task		-.48	.06	-.17	-.06	.11	.05	.05	.06	.20	.004	-.45	-.13	-.29	.12	.08	.08	-.20	-.20
13 Negative comments		.03	-.08	.20	-.09	.13	-.08	-.08	.06	-.14	.78	-.08	-.15	-.07	-.06	.04	.04	.59	-.35
14 Positive comments		-.06	.12	.11	.20	-.001	.13	.13	.03	.05	.18	-.27	.06	-.22	-.34	-.11	-.11	.01	.51
15 Explains assignment, organization		.16	.20	.14	.01	-.01	.20	.20	.54	-.22	.13	-.41	.18	-.39	.39	.25	.25	-.10	.02
16 Social comments		.07	.09	.01	.24	.07	.09	.09	.51	.10	.13	-.28	.08	.21	.06	-.08	-.08	.04	-.06
17 Noninvolved with students		-.53	-.12	-.37	-.09	.15	-.15	-.15	.37	.41	-.19	.49	-.15	.53	-.11	-.06	-.06	-.01	-.28
19 Behavior corrections		-.47	.21	.13	.28	.10	-.29	-.29	.30	.25	.16	.41	.29	.33	-.45	.02	.02	.37	-.13
36 Praises for nonacademic task		-.10	-.18	.43	.31	.20	-.15	-.15	-.35	.14	.02	-.09	.10	-.05	-.15	.51	.51	.01	-.04

Underlined coefficients indicate $p < .05$.

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lecturing, or explaining (Variables 2 and 8). Although the correlations for individual interactions are not significant, they show a tendency for handicapped students to show less attention when the teacher spends more time interacting with individual students (Variable 35). When teachers asked questions (Variable 05), students showed more attending behavior. Teacher offers of help (Variable 06) and supportive corrective feedback (Variable 10) also show positive relationships with attending behavior. These three instructional variables suggest that in classrooms where teachers ask questions, offer help, and provide supportive feedback, the handicapped student attended more to the task. These teaching processes were not necessarily directed to the handicapped student, but could have been directed to the entire class or to other students. In classrooms where teachers spend more time interacting with individual students, the handicapped student spent less time attending to group instruction.

Teacher monitoring (Variable 12) and the student being at a table with others for seatwork (Variable 54) indicate nonteacher-directed instructional activities. The more independent seatwork assigned, the less opportunity the student has to attend to class instruction, thus a negative correlation is shown for Variable 12 and Variable 54. In classrooms where the teacher provided more nonsupportive feedback (Variable 11), students showed less attending behavior. This correlation suggests that the type of feedback the teacher provides to the class, in general, is related to the student's attending behavior, for the more supportive feedback teachers provide, the more attending behavior the student displayed.

In summary, the correlations for the on-task-passive variables indicate that in classrooms where teachers interact with the entire class, ask questions, offer help, and provide supportive feedback, students show more attending behavior. In classrooms where teachers provided nonsupportive feedback and behavior corrections, students showed less attending behavior.

Oral Participation

The oral participation cluster of variables indicates the amount of the student's verbal involvement in class activities. The correlation indicates less oral participation by students when there is more teacher interaction with the entire class. In contrast, the individual interaction variables (Variables 01, 04, and 35) show a positive relationship with student oral participation.

The teaching variables listed under the cluster for direct instruction all show positive relationships with student oral participation. These relationships seem to indicate that the more teachers directed questions to individual students and provided supportive feedback, the more the handicapped student would respond (Variable 62), initiate task-related questions (Variable 63), and ask for help (Variable 65). Teacher interactions with groups of students (Variable 04), rather than the entire class, also are positively related to the student's responding to and initiating task-related comments.

Two of the classroom climate variables were significantly related to student-initiated comments to adults. The more teachers were involved in classroom organization without students, (Variable 17), the less the handicapped student initiated task-related comments to the adult. In contrast, praise for nonacademic behavior (Variable 36) is positively related to student initiated comments.

The correlations for student oral participation indicate that when teachers interacted with groups of students rather than the whole class, asked questions, and provided supportive feedback, the handicapped student showed more verbal involvement in the class instruction. Student-initiated comments increased with teacher's praise for both academic and nonacademic behavior. When teachers were observed in classroom organization without students, students were observed in less oral participation.

On-Task Independent

Only one correlation for on-task, seatwork reached a level of statistical significance. Teacher interactions with a group of students (Variable 03) were positively correlated with student on-task, seatwork (Variable 61). Teacher interactions with entire class (Variable 02) was negatively correlated with Variable 61, but this correlation is an artifact of the classroom structure, i.e., in classes where teachers devote more time to instructing the entire class, students would spend less time in independent seatwork.

The correlation between Variable 61 (on task, seatwork) and Variable 54 (places student at a table with others) was not statistically significant; however, the direction was positive and the correlation was stronger than placing a student at a desk or table alone (Variable 53).

Weak negative correlations with on-task behavior were seen for both Variable 12 (monitors student seatwork) and Variable 17 (classroom organization without students). Variable 35, (interacts with individual, task), showed a positive relationship. The directions of these three correlations suggest that handicapped students tend to stay on-task more when the teacher walks around the room interacting with individual students. When teachers nonverbally monitor students' seatwork or work on organizational tasks without students, the handicapped student showed less on-task behavior.

Off-Task Behavior

The correlations obtained for off-task behavior support the above interpretation regarding teachers' activities during independent seatwork. Both monitoring (Variable 12) and classroom organization without students (Variable 17) were statistically significant and positively correlated with student noninvolvement (Variable 71). Two teaching process variables in the

direct instruction cluster show negative relationships with Variable 71: Variable 05 (asks questions) and Variable 09 (praise). These relationships indicate that when teachers are involved with students, the students tend to be less noninvolved.

A second indicator of off-task behavior was student's lack of response to adult's questions (Variable 64). Students were only recorded as not responding when the teacher had asked a question. All of the direct instruction variables show a positive relationship with Variable 64; however, the more questions that are asked of the student, the more opportunity the student has both to respond or not to respond. Therefore, these relationships are indicative of the class structure. A better indication of the relationship between students' lack of response and teaching processes is provided by the teacher monitoring variable (Variable 12) and several of the classroom climate variables. Teacher monitoring and classroom organization without students (Variable 17) are positively correlated with occurrences of students not responding (Variable 64). Therefore, the more teachers tend to be without students, the more handicapped students tend not to respond to the teacher's questions. The strongest correlation in the matrix was obtained between nonsupportive feedback (Variable 11) and Variable 64. In classes where teachers use nonsupportive feedback in general, the handicapped student showed more nonresponding behavior.

Teaching processes indicating time spent in organization and socializing (Variables 15 and 16, respectively) show a positive relationship with students not responding (Variable 64). A high occurrence of Variables 15 and 16 would reflect a class that was not academically focused. Perhaps students react to the lack of academic focus by feeling they do not have to respond to the teacher's academic questions.

The negative relationship between the Variable 64 and Variable 36 (praise for nonacademic behavior) is difficult to interpret, for Variable 36 has two components: (1) nonacademic teaching and (2) praise. In classrooms where teachers provided more nonacademic praise, students showed less

nonresponding academic behavior. This correlation probably indicates that in classrooms where students are given more nonacademic praise, less time is spent in academic instruction.

Social Behavior

Several instructional practices are related to handicapped students' socializing in the classroom. As would be expected, the more teachers lecture or explain (Variable 08), the less students socialize; however, teacher academic interaction with the mainstreamed student (Variable 01) is positively correlated with student social interaction with the adult (Variable 68). This result suggests that when teachers interact academically with handicapped students the student initiates social comments to the teacher. Teacher offers help (Variable 06) is positively correlated with all student socializing (Variables 67 and 68). This result suggests that in classrooms where teachers offer students help, the mainstreamed student feels more comfortable in interacting socially with other people in the room.

Supportive feedback, (Variable 10) which is a significant variable for student academic involvement, also is related to student social behavior. In classrooms where teachers provide more supportive feedback, students are observed in more social interaction with the adult. While several academic practices are related to students' social interactions, it is interesting to note, however, that teacher's social comments (Variable 16) are not significantly related to any student social behavior.

Nonsupportive corrective feedback from the teacher (Variable 11) shows a negative relationship with the handicapped student's social interaction with other students (Variable 67). Non-supportive feedback is negatively related both to student academic and social behavior. The teacher's involvement in classroom organization without students (Variable 17) is positively related to Variable 67. The more teachers are not involved with students, the more students are interacting with each other.

During our conversations with special education teachers, we received a range of reports regarding the teachers' expectations of the mainstream process. Some teachers felt that students should be mainstreamed for academic purposes and the development of social skills was of secondary importance. Other teachers emphasized the social aspect of being in the regular education classroom and were not concerned with academic learning. This dichotomy, however, may not be necessary. Several instructional practices are related both to students' academic and social behavior. Teachers may use instructional practices that will benefit the students both academically and socially.

Classroom Management

Two student observation variables indicate the amount of time students spend in classroom organizational activities (Variables 58 and 82). A positive relationship was obtained between Variable 58 (student attends organizational explanations) and Variable 15 (teacher explains assignments, organization). This relationship is logical: since the more time teachers spend in explaining assignments, the more time students would be expected to attend to the explanations.

A negative relationship was obtained between Variable 82 (student gets ready) and Variables 6 and 9 (teachers offers help and teacher provides praise or acknowledgement, task). A negative relationship was obtained between Variable 82 and Variable 12 (teacher monitors students' seatwork). These relationships suggest that the more teachers ask students if they need help and praise students for their academic work, the less time students spend in nonacademic activities such as sharpening pencils and organizing materials.

Affect

The significant results in the affect cluster indicate the relationship between the teacher's and student's affective behaviors. Teacher's negative comments (Variable 13) are positively correlated with student negative interactions with teachers or other students (Variable 79). Teacher positive comments (Variable 14) are positively correlated with student positive interactions (Variable 80). These correlations indicate the strong relationship between the teacher affective behavior and student affective behavior. The more teachers show positive behavior, the more students show positive behavior. The same relationship was shown for negative behavior.

Summary of Student Involvement in Academic Instruction

The results of this research question indicate that the same general types of instructional practices are related to all four aspects of student academic involvement: on-task passive, oral participation, on-task independent, and off-task. The instructional practices related to student academic involvement reflect teacher-directed instruction. These results are similar to research results that have investigated the relationship between instructional practices and student achievement gain (Stallings and Kaskowitz, 1974; Stallings et al., 1979). The results of the present study indicate that students attend to class instruction more when teachers ask more questions, make certain the students understand, and provide supportive corrective feedback. The same types of teaching processes are related to student oral participation; teacher questions and teacher praise are related to students' responses and requests for help. Group instruction also is related to student oral participation.

Students show more off-task behavior when teachers are not interacting with students, and less off-task when teachers ask questions and provide praise for an academic task. Students tend not to respond to teacher questions when teachers provide more nonsupportive feedback.

The student's placement within the class is related to students' oral participation. When teachers place students at a table with other students, the student more frequently tends to respond, to initiate interactions more and to interact with other students regarding the academic task. Group instruction might be a more comfortable environment for the mainstreamed student. The student being placed at a table with other students shows a positive correlation with student on-task behavior.

The social interactions of the handicapped student increased when teachers provided a supportive instructional environment. When teachers offer help and provide supportive corrective feedback, students interact socially with other students and the teacher. The results suggest that the affective tone of the teacher's interactions is related to the affective tone of the student's interactions. The more often teachers interact negatively, the more frequently students interact negatively.

Question 1.2 - How do instructional practices relate to the handicapped students attitude toward the classroom?

This analysis used data on the mainstreamed students' attitude toward the regular education classroom and data on students' classroom behavior. The measure of student attitude was the eight items in the student questionnaire asking questions about the regular education class. The internal consistency reliability test of the data from this set of items showed an alpha coefficient of .73. The measure of student behavior was all variables from the mainstreamed student-focus observations conducted in the regular classroom (observation type 3.0). Correlations were computed between the students' rating and the student-focus observation variables. The correlations are shown in Table 9.

Four observation variables show statistically significant negative correlations with student attitude: Variable 45 (student receives

nonsupportive feedback from adult, task), Variable 52 (student receives behavior corrections from adult), Variable 59 (student attends to group behavior corrections), and Variable 64 (student does not respond to adults' question or request, task). These negative relationships suggest that students do not like classrooms where they receive nonsupportive feedback and class time is devoted to behavior management. Also, in classrooms where students are asked questions to which they do not respond, students report more negative attitudes.

Two observation variables that indicate student involvement show statistically significant positive correlations with student attitude: Variable 57 (student attends to group instruction, task) and Variable 61 (student on-task, seatwork). These positive relationships suggest that the frequency of appropriate student behavior is related to student attitudes.

These results suggest that students have more positive attitudes when they behave appropriately and are involved in the instructional activity. Interestingly, the frequency of social comments and individual instruction were not significantly related to student attitude. When students are placed in an academic setting, their attitudes toward the class are related to the types of behaviors expected in that type of instructional setting. These results could be useful to teachers who are working with mainstreamed students. When the instructional environment can be structured in a way that helps the student be an active learner, not only are the teacher's objectives achieved, but the student feels better about the class.

Table 9

CORRELATIONS BETWEEN STUDENT-FOCUS OBSERVATION VARIABLES AND STUDENT ATTITUDE TOWARD THE MAINSTREAMED CLASS (N = 21 Classes)

STUDENT-FOCUS OBSERVATION VARIABLE		r
37	Adult asks student question, task	.17
38	Student receives offers of held from an adult	.08
39	Student receives responses to question from adult, task	-.10
40	Student receives explanation from adult, task	.09
41	Student receives praise or acknowledgement from adult, task	.13
42	Student receives praise or acknowledgment from an adult, nontask	.04
43	All praise and acknowledgment from adult	.09
44	Student receives supportive feedback from adult,task	.06
45	Student receives nonsupportive feedback from adult, task	-.37*
46	Adult does not respond to student question	.17
47	Student receives negative comment from adult	.00
48	Student receives positive comment from adult	-.12
49	Student receives social comments from adult	.21
50	Student receives explanations from adult about classroom organization	.05

Table 9 (continued)

	STUDENT-FOCUS OBSERVATION VARIABLE	r
51	All academic instruction student receives from adult	.16
52	Student receives behavior corrections from adult	-.84**
53	Teacher places student at a desk or table, alone	.39*
54	Teacher places student at a table with other students	.05
55	Teacher places student in a cooperative group	.11
56	Teacher places student in a teacher-directed activity	-.34
57	Student attends to group instruction: task	.57**
58	Student attends to group instruction or responds to commands: classroom organization	.10
59	Student attends to group behavior corrections	-.37*
60	Student attends to group interactions social	.08
61	Student on-task, seatwork	.57**
62	Student responds to adults question or request to recite, task	.06
63	Student initiates comment to adult, task	.008
64	Student does not respond to adults' question or request, task	-.70**
65	Student asks adult for help, task	-.16
66	Student interacts with other student, task	.19
67	Student initiates interaction with other student, social	.09
68	Student responds to or initiates social comment to adult	.09

Table 9 (concluded)

	STUDENT-FOCUS OBSERVATION VARIABLE	r
71	All student off-task, noninvolved	-.11
72	All interactions with other students	.19
78	All student responses, comments to adult: task	.07
79	All student makes negative remarks to teachers, or others; all negative comments student receives from other students	.07
80	All student makes positive remarks to teachers, other students; all positive comments student receives from other students	.01
81	Student does not respond to adult's commands, requests or corrections: nontask	.22
82	Student gets instructional materials organized: not involved in academic work	-.12

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*$p < .05$

**$p < .01$

Question 2.1 - Is the type of program structure related to instructional practices and student behavior?

For the schools participating in the study, three types of mainstreaming programs were identified:

- Subject-based
- Student-specific
- Homeroom.

These three types of program are described in Chapter II of this report. To determine the association between program structure and instructional practices and student behavior each class was assigned to one of the three types of programs. Since the type of program was determined by the school administration, all classes within a school were assigned to the same program. A one-way analysis of variance with three groups was performed on each of the variables formed from the student-focus observation data. Data from observations of the handicapped student in the regular education class were used for this analysis (observation type 3.0).

Table 10 shows the means and standard deviation for each program group. The F ratio for each test also is indicated. We chose to consider variables significant if the F ratio reached a probability level of .09 or lower. Because we were attempting to identify trends, if the significant variables were able to describe a certain type of classroom, we would have a degree of confidence in the results.

The variables that obtained a significant F ratio identified the subject-based classrooms as the type of classrooms where more interactive instruction was occurring and subsequently students had more opportunity to actively participate in the academic activity of the classroom. Classrooms in the subject-based programs showed higher percentage scores on adult asks student questions, task (Variable 37); receives offer of help (Variable 38); receives praise from adult, task (Variable 41); receives praise, nontask

Table 10

STUDENT OBSERVATION VARIABLES
BY PROGRAM STRUCTURE

Variable Number	Instructional Practice Variables	Group 1: Subject-Based (N=8) X̄	S.D.	Group 2: Student-Specific (N=10) X̄	S.D.	Group 3: Home-room (N=3) X̄	S.D.	F
37	Adult asks student question, task	.011	(.006)	.005	(.007)	.003	(.003)	2.73*
38	Student receives offer of help from adult	.002	(.002)	.001	(.001)	.0003	(.001)	3.68**
39	Student receives response from adult, task	.004	(.002)	.003	(.002)	.002	(.002)	.53
40	Student receives explanation from adult, task	.005	(.003)	.11	(.02)	.010	(.004)	.69
41	Student receives praise from adult, task	.010	(.006)	.004	(.004)	.001	(.001)	5.82**
42	Student receives praise, nontask	.0004	(.001)	.000	(.000)	.000	(.000)	2.63*
43	All praise	.010	(.01)	.003	(.004)	.000	(.000)	5.23*
44	Student receives supportive feedback, task	.01	(.01)	.003	(.007)	.000	(.000)	3.59*
45	Student receives nonsupportive feedback, task	.003	(.004)	.004	(.006)	.004	(.006)	.20
46	Adult does not respond to student question	.000	(.000)	.000	(.000)	.000	(.000)	.69
47	Student receives negative comment from adult	.002	(.005)	.000	(.000)	.000	(.000)	.74
48	Student receives positive comment from adult	.001	(.001)	.000	(.000)	.001	(.001)	.69
49	Student receives social comment from adult	.001	(.002)	.001	(.001)	.001	(.000)	1.28
50	Student receives explanations in classroom organization	.003	(.003)	.003	(.003	.004	(.003)	.31
51	All academic instruction from adult	.04	(.02)	.03	(.02)	.02	(.01)	2.80*
52	Student receives behavior corrections	.001	(.001)	.001	(.003)	.001	(.001)	.04
53	Teacher places student at desk, alone	.16	(.17)	.16	(.13)	.12	(.10)	.10
54	Teacher places student at table with others	.32	(.25)	.12	(.13)	(.13)	(.14)	2.97*
55	Teacher places student in a comparative group	.03	(.02)	.02	(.04)	.01	(.01)	.36
56	Teacher places student in a teacher directed activity	.41	(.17)	.65	(.18)	.68	(.16)	4.99**
	Student Behavior Variables							
57	Attends to group instruction, task	.24	(.15)	.28	(.20)	.32	(.20)	.27
58	Attends to group instruction, classroom organization	.02	(.02)	.04	(.02)	.02	(.01)	4.21**
59	Attends to group behavior corrections	.006	(.008)	.004	(.004)	.003	(.004)	.34
60	Attends to group interactions, social	.002	(.002)	.000	(.001)	.000	(.000)	2.40
61	On-task, seatwork	.40	(.12)	.34	(.19)	.31	(.16)	.40
62	Responds to adult's question, task	.05	(.02)	.02	(.02)	.01	(.004)	5.80***
63	Initiates comment to adult, task	.003	(.0020	.001	(.001)	(.001)	(.001)	3.42**
64	Does not respond to adult's question	.010	(.01)	.019	(.02)	.004	(.001)	1.25
65	Asks for help, task	.005	(.003)	.004	(.002)	.003	(.001)	.96
66	Interacts with other students, task	.02	(.02)	.02	(.02)	.01	(.01)	.49
67	Initiates interactions with other students, social	.05	(.04)	.03	(.02)	.03	(.01)	1.76
68	Social comments to adult	.12	(.06)	.17	(.12)	.20	(.13)	.87
71	Off-task, noninvolved	.04	(.03)	.06	(.04)	.05	(.00)	.52
72	All interactions with other students	.001	(.001)	.000	(.000)	.000	(.000)	.82
79	Negative interactions	.001	(.002)	.001	(.001)	.003	(.004)	1.45
80	Positive interactions	.001	(.002)	.001	(.001)	.003	.004	1.45
81	Does not respond to commands, nontask	.000	(.001)	.002	(.002)	.000	(.000)	2.96*
82	Gets instructional materials organized	.03	(.03)	.03	(.03)	.05	(.07)	.59

*p < .09
**p < .05
***p < .01

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(Variable 42); total praise (Variable 43); receives supportive feedback, task (Variable 44); all academic instruction from adult (Variable 51); placed at table with others (Variable 54); responds to adult's questions, task (Variable 62); and initiates comments to adult, task (Variable 63). Classrooms in the student-specific group showed the highest score in attends to group instruction, organization (Variable 58); and does not respond to comments, nontask (Variable 81).

Although, no significant difference among the groups were indicated for on-task seatwork (Variable 61) the classrooms in the subject-based group did score highest on Variable 61. These classrooms also scored lowest on attends to groups instruction, task (Variable 57). This low score might be caused by the fact that these students more frequently were participating in a recitation activity and consequently spent less time in listening to others.

These results suggest that in the subject-based programs, students were more actively involved in the instructional activity of the classroom. A description of the nature of these programs contributes to understanding the results of the observation data. In the subject-based programs, students were mainstreamed into a classroom where all students are homogeneously grouped for academic instruction. This type of program requires the cooperation of all teachers of the grade levels participating in the program. Each teacher agrees to teach a group of students of a certain achievement level. At a specified time of day, all students in those grade levels change classrooms for academic instruction. They go to the classroom of the teacher who is teaching their achievement level. At this time, the handicapped student is mainstreamed into the appropriate classroom. In this type of program, the regular education teacher assumes responsibility for the student's learning, and often that teacher assigns the student's report card grade for the subject being taught. In the subject-based program, the handicapped student is not an outsider entering an established social group, the classroom. Because all students are changing classrooms, the handicapped student is as much a member of that class as any other student

in the room. The teacher's sense of accountability for the student's learning and the student's established membership in the class might be factors contributing to the handicapped student's active participation in the classroom instruction.

We considered the possibility that the students participating in the subject-based program might be of a higher achievement level than students in the other two programs. Since we did not obtain student's standardized test scores, we do not have quantitative data to use in response to that argument. We did follow rigorous criteria in our sample selection. All students had been identified as learning handicapped, were fourth and fifth graders, and were mainstreamed for an academic subject for approximately one hour a day. The type of program was designated at the school level, and individual special education teachers were not implementing more than one of the three types of programs. Therefore, the special education teachers were not placing the higher achieving students into subject-based programs and lower achieving students into one of the other two types of programs. The special education teachers in the subject-based program reported that it was easier to identify appropriate placement for their students than in a student-specific program. In the former program, the teacher could more easily identify a class of an appropriate achievement level where the other students were closer to the age of the handicapped student. The special education teachers in the subject-based programs had as high a percentage of their students mainstreamed as did teachers in the student-specific programs. On the basis of this information, we rejected the possibility that students in the subject-based program showed more active participation because they were of a higher achievement level than students in the other two programs.

Question 2.2 - Is the type of program structure related to student attitudes and integration?

To determine whether program structure is related to student attitudes and integration, attitude scales from the student questionnaire data were used in the analysis; responses to the two questions from the student interview regarding integration also were used.

The attitude scales formed from the questionnaire data were: (1) attitude - special day class; (2) attitude - regular education class; and (3) attitude - peers. The reliability tests of internal consistency of items showed the following alpha coefficients: (1) attitude - special day class, .79; (2) attitude - regular education class, .73; and (3) attitude - peers, .02. The first two scales showed an acceptable level of reliability; however, the attitude toward peers scale was unreliable and that scale was not included in the analysis.

Table 11 shows the means, standard deviations and F ratios for the two scales. No significant differences were found for either scale. Students in the homeroom programs tended to rate their special day class higher than did students in the other two groups. To determine if students showed significantly different attitudes toward their two classes, a analysis of variance was performed on the difference scores for each group. The results show that students did not show a significant difference in their attitudes by program structure.

Integration

To identify the degree to which the handicapped students were integrated into the social life of the school, we asked the students two questions: (1) with whom do you eat lunch; and (2) what do you do during

Table 11

STUDENT RESPONSES TO ATTITUDE MEASURES,
BY THREE PROGRAM GROUPS

Scale	Subject-Based (N = 11 students) $\bar{X}$	S.D.	Student-Specific (N = 11 students) $\bar{X}$	S.D.	Homeroom (N = 6 students) $\bar{X}$	S.D.	F	p
Attitude-special day class	3.57	.61	3.94	.49	4.13	.29	2.74	.08
Attitude-regular education class	3.60	.80	4.01	.47	3.63	.65	1.25	.30
Differences between attitudes toward special day class and regular education class	.04	.95	.07	.40	.50	.60	1.44	.26

recesses and with whom do you play?" Table 12 and 13 show the frequency of responses for these two questions. All students in the homeroom program reported that they ate lunch with regular education students (see Table 12). The chi-square for this contingency table reached statistical significance ($p < .01$).

This analysis indicated that students in the homeroom program were more integrated during the lunch time than were students in the other two programs. This result seems reasonabile considering the structure of the homeroom program. In that program, the handicapped students were mainstreamed for 30 minutes before lunch and 30 minutes after lunch. Being in the classroom immediately before lunch and immediately after lunch seemed to facilitate the handicapped students' socialization with regular education students.

Students' Playmates

We wanted to assess the degree to which the handicapped student socialized with nonhandicapped students during a free-play period. In most elementary schools, these periods usually are less structured than the time when the students are eating their lunch therefore, students have more individual choice about with whom they spend the period.

The frequency of student responses by category and program structure are shown in Table 13. The chi-square did not reach a level of statistical significance; however, the results indicate a difference among the three groups. All of the students in the homeroom groups reported that they played with regular education students. Only 27 percent of the subject-based students reported playing with regular education students. Of the 11 students in the student-specific programs, 62% named regular education students when asked to identify their playmates. Although the homeroom program had fewer students than the other programs, the high percentage of students in that program who played with the regular education students is worthy of attention.

Table 12

STUDENT RESPONSES TO QUESTION CONCERNING
LUNCH COMPANIONS - BY PROGRAM STRUCTURE

	Subject-Specific	Student-Specific	Homeroom	
Special education students	9	7	0	16
Regular education students	0	2	4	6
Both	2	2	2	6
	11	11	6	

$\chi^2 = 13.33$ $p < .01$

Table 13

STUDENTS' RESPONSES TO QUESTION CONCERNING
PLAYMATES - BY PROGRAM STRUCTURE

	Subject-Specific	Student-Specific	Homeroom	
Nothing-alone	1	0	0	1
Nothing-special day class students	0	1	0	1
Play-special day class students	7	3	0	10
Play-regular education students	2	2	2	6
Play-both students	1	5	4	10
	11	11	6	

$\chi^2 = 12.44 \quad p < .13$

The results of the analysis indicate that the homeroom program was most successful in facilitating the integration of handicapped students. The handicapped students in this program were listed on the class role of the mainstreamed classroom and reported to that room at the beginning of the school day. They remained in the classroom while attendance was being taken and lunch money collected. When these administrative tasks were completed they went to their special day class. The students returned to the mainstream classroom for academic instruction 30 minutes before and 30 minutes after lunch. The special education teacher reported that the principal of the school required that all teachers be committed to mainstreaming. The structure of this program and the regular education teachers' commitment to the program seemed to contribute to the integration of the handicapped student into the social life of the school.

Question 2.3 - Is program structure related to the communication between regular and special education teachers?

To determine whether program structure was related to staff communication, a one-way analysis of variance was performed on the data from selected teacher questionnaire items. The six items related to staff communication and the six items related to staff collaboration were used to form scales of communication and collaboration, respectively. The reliability test of internal consistency showed an alpha coefficient of .77 for communication and .77 for collaboration.

Table 14 shows the means and standard deviations for the communication and collaboration scales by program structure. No differences are shown among the three groups.

Table 14

REGULAR EDUCATION TEACHERS PERCEPTION OF STAFF COMMUNICATION AND COLLABORATION BY THREE PROGRAM STRUCTURE GROUPS

	Subject-Based (N = 8 teachers)		Student-Specific (N = 9 teachers)		Homeroom (N = 3 teachers)			
	X	S.D.	X	S.D.	X	S.D.	F	p
Communication	3.65	(.59)	3.50	(.61)	3.55	(.25)	.141	.87
Collaboration	3.69	(.80)	3.51	(.76)	3.40	(.20)	.22	.80

Question 2.4 - Is program structure related to teachers' attitudes toward mainstreaming?

Data from the teacher questionnaire were used as measures of teachers' attitudes. Two scales were developed from items concerning teachers' attitude toward: (1) the effect of mainstreaming on regular education students; and (2) the effect of mainstreaming on special education students. The reliability tests of internal consistency of items showed alpha coefficients of .80 for both scales.

Items related to the teachers attitude toward skills needed by the mainstreamed students were analyzed separately, and a scale was not formed. Because the items identified both social and academic skills, we though we might obtain more useful information if each item was analyzed separately, rather than forming a composite scale for the analysis. A one-way analysis of variance was performed for each measure of teacher attitude.

Table 15 shows the means and standard deviations for the various measures of teachers' attitudes by the three program structure groups. The three groups differed significantly on only one item. Although the probability level did not reach .05, the last item concerning mainstreamed student's skills (acceptance from regular education students) shows a difference in the responses among the three groups. Teachers in the homeroom group rated this skill higher than did teachers in the other two groups. Interestingly, students in the homeroom group reported a higher degree of integration during lunch time than did students in the other two groups. These two results suggest the homeroom program's emphasis on integrating students into the mainstream of the school environment influenced teachers concern regarding students integration and consequently the students in that program experienced a higher degree of integration.

Question 2.5 - Is class size related to student behavior?

This analysis attempted to identify relationship between the class size of the mainstream class and student behavior; the relationship between class size and instructional practices was also investigated. The average class size of the mainstreamed classes in this study was 29.63 with a standard deviation of 3.98.

Correlations were computed between class size and the percentage score of each variable from observations conducted when the handicapped student was in the mainstream class. No statistically significant correlations were obtained between class size and the instructional practice variables. This lack of relationship indicates that the percentage of time each instructional practice was observed did not vary as a function of class size.

Correlations were computed between the class size and the student behavior variables from the handicapped student observations conducted in the mainstream classroom. Of the 41 correlations computed, only two significant correlations were obtained. These two variables were

Table 15

REGULAR EDUCATION TEACHERS' ATTITUDES TOWARD MAINSTREAMING BY THREE PROGRAM STRUCTURE GROUPS

Variable	Subject-Based (N = 8 teachers) $\bar{X}$	S.D.	Student-Specific (N = 9 teachers) $\bar{X}$	S.D.	Homeroom (N = 3 teachers) $\bar{X}$	S.D.	F	p
Effect on regular education students	3.42	(.39)	3.22	(.60)	2.67	(.88)	1.90	.18
Effect on special education students	3.87	(.36)	3.76	(.33)	3.86	(.20)	.27	.77
Skills Needed:								
Focus	4.25	(.46)	4.22	(.67)	3.67	(.58)	1.23	.32
Follow directions	4.25	(.71)	3.78	(.67)	4.00	(.00)	1.14	.34
Organize materials	4.00	(.53)	3.67	(.71)	3.33	(.58)	1.38	.28
Refrain from negative behavior	4.13	(.64)	3.56	(.88)	4.33	(.58)	1.77	.20
Work cooperatively	3.43	(.79)	3.44	(1.01)	3.67	(.58)	.09	.92
Refrain from excessive socializing	4.00	(.76)	3.56	(.88)	4.33	(1.15)	1.10	.36
Participate orally, ask for assistance	2.88	(.83)	2.44	(.53)	2.00	(.00)	2.22	.14
Read grade level	3.50	(.53)	3.33	(.71)	2.67	(.58)	1.96	.17
Perform arithmetic grade level	2.25	(.89)	2.56	(.88)	2.67	(.58)	.39	.69
Writing	2.50	(1.07)	2.50	(.93)	2.67	(.58)	.04	.96
Work independently	2.88	(.83)	3.22	(.97)	3.00	(.00)	.36	.71
Acceptance by regular education students	3.38	(.92)	3.44	(.73)	4.67	(.58)	3.19	.06

Variable 51 (all academic instruction student receives from an adult) and Variable 61 (student on-task, idependent seat work). Variable 51 showed a negative correlation (r=-.36) and Variable 61 showed a positive correlation (r=.41). These two correlations indicate that the larger the class size, the more time the handicapped students spent in independent work and the less time students received individual instruction from the adult.

Question 2.6 - Is the number of handicapped students in the classroom related to student behavior?

This analysis investigated relationships between the number of special education students in the class and student behavior. The relationship between number of special education students and instructional practices was also investigated. The measure used for number of special education students was the total of students enrolled in pull-out programs and students enrolled in a special day class. Table 16 shows the means and standard deviation for each type of special education student enrolled in the participating classrooms.

Table 16

NUMBER OF SPECIAL EDUCATION STUDENTS ENROLLED IN A PULL-OUT PROGRAM AND NUMBER ENROLLED IN A SPECIAL DAY CLASS (N=21 Classes)

	$\bar{X}$	S.D.
Special education students enrolled in a pull-out program	3.21	1.93
Special education students enrolled in a special day class	1.90	1.01
Total special education students	5.14	1.86

Correlations were computed between total number of special education students in the room and the percentage score of each variable from observations conducted when the handicapped student was in the mainstream class. The correlations of instructional practices yielded only one statistically significant correlation; Variable 17 (teacher without students) was positively correlated (r= .43) with the total number of special education students. Because this one significant correlation could have occurred by chance, the results must be interpreted with extreme caution. The correlation suggests that the amount of time teachers are without students increases with the number of special education students in the room.

Correlations were computed between the total number of special education students and the handicapped student behavior variables. Three correlations reached a level of statistical significance. Variable 45 (student receives non supportive feedback, task); Variable 66 (student interacts with other students); and Variable 81 (student does not respond to adult commands, non-task) showed positive correlation of .45, .37, and .41 respectively.

Because of the small number of significant correlations obtained, the analysis of class size and total number of special education students must be interpreted with caution. The results suggest that students receive less individual attention as the class size increases. The correlations for total number of special education students indicate that there might be a maximum number of special education students who should be in a class at one time. Teachers were without students more as the number of special education students increased. The handicapped student received more nonsupportive feedback and showed more nonresponding behavior. Because these behaviors usually are considered undesireable, the results suggest that some inappropriate student behavior may vary as a function of the number of handicapped students in the class.

Differences between the special and regular educators' responses to questionnaire items.

The analysis of staff communication and teacher attitudes used data from questionnaires completed by regular education teachers. Because of the small sample of special education teachers, data from questionnaires completed by those teachers were not analyzed by the three program groups; however, differences between the responses of regular and special education teachers were investigated. Table 17 shows the means and standard deviations for the two groups of teachers. Separate t-tests were computed for each questionnaire variable.

Special education teachers' attitudes toward the benefit of mainstreaming for regular education students were more positive than were the attitudes reported by regular education teachers. Because special education teachers are not as involved with regular education students, and have less information upon which to base a judgment, they might tend to be more optimistic about the benefit of the program.

The two groups of teachers also differed in their perception of the staff communication and collaboration existing at their school. The special education teachers reported more negative attitudes. This difference may reflect the level of involvement for the two groups of teachers. Special education teachers are the agents of change in the mainstreaming process, that is, they must initiate the process and are actively involved in monitoring the progress. This active involvement in the implementation of the program could result in a more critical attitude.

Special and regular education teachers also showed differences in their expectations of special education students. The special education teacher had higher expectations for skills needed by the mainstreamed student. The special educators reported higher expectations on the following skills: focus, follow directions, organize materials, participate orally, and ask for assistance. The special education teachers did not have higher expectations for socializing, cooperation, or reading and math achievement.

Table 17

REGULAR AND SPECIAL EDUCATION TEACHERS' RESPONSES TO QUESTIONNAIRE VARIABLES

Variable	Special Education Teacher (N = 11)		Regular Education Teacher (N = 20)		
	$\bar{X}$	S.D.	$\bar{X}$	S.D	t
Effect of mainstreaming on regular education students	3.81	(.46)	3.22	(.60)	8.57**
Effect of mainstreaming on special education students	3.88	(.46)	3.82	(.32)	.174
Communication between regular and special educators	3.06	(.75)	3.57	(.54)	4.98**
Collaboration between regular and special educators	2.93	(.77)	3.57	(.70)	5.78*
Skills Mainstreamed Student Needs:					
Focus	4.58	(.51)	4.15	(.59)	4.46*
Follow directions	4.58	(.51)	4.00	(.64)	7.03*
Organize materials	4.42	(.67)	3.75	(.64)	7.90**
Refrain from negative behavior	4.08	(.67)	3.90	(.79)	.45
Work in cooperatively	3.50	(.90)	3.47	(.84)	.007
Refrain from excessive socializing	3.92	(.79)	3.85	(.88)	.046
Participate orally	3.17	(1.03)	2.55	(.69)	4.15*
Ask for assistance	4.25	(.75)	3.30	(.66)	14.05***
Read grade level	2.67	(.78)	2.45	(.83)	.538
Perform arithmatic grade level	2.67	(.78)	2.52	(.90)	.196
Writing	3.17	(1.03)	3.05	(.83	.124
Work independently	3.92	(1.00)	3.60	(.88)	.88

* $p > .05$

** $p > .01$

*** $p > .001$

In summary, these results indicate that, although special education teachers are more critical (or concerned) about the communication and collaboration among regular and special educators, they have a more positive attitude about the benefits of mainstreaming and have higher expectations of their students than do the regular education teachers. These results indicate that the attitudes of regular and special education teachers differ and an assessment of staff attitudes should present separate measures for the two groups of teachers.

Question 3.1 - How do instructional practices that occur when the handicapped student is in the regular classroom differ from those that occur when the handicapped student is not in the regular classroom?

To determine differences in the instructional practices that occur when the handicapped student is in the room and practices that occur when the student is not in the room, observations were conducted under both situations (observation types 1.0 and 4.0). A comparison of the teacher-focus observations conducted during both situations would offer an estimation of the degree to which the presence of the handicapped student distracted from the academic instruction. Table 18 shows the mean and standard deviation for each of the instructional practice variables for the two classroom situations. A *t* test of dependent measures was conducted on the means for each variable. Three *t* values reached a level of statistical significance. These variables were teacher interacts with mainstreamed student, task (Variable 01); teacher in classroom organization, without students (Variable 15); and teacher in academic instruction (Variable 18). One would expect a large difference in the two means for Variable 1, because the handicapped student was not in the room during one type of observation. The other two variables present information that is pretinent to this research question. The means for these two variables indicate that when the student is in the room, teachers spend more time in academic instruction and

Table 18

INSTRUCTIONAL PRACTICE VARIABLES, OBSERVED UNDER TWO CONDITIONS
(N = 21 Teachers)

Variable Number	Instructional Practice Variables	Handicapped Student in Room		Handicapped Student not in Room		t
		$\bar{X}$	S.D.	$\bar{X}$	S.D.	
1	Interacts with mainstream student, task	.02	(.02)	.00	(.00)	5.85**
2	Interacts with entire class, task	.21	(.14)	.16	(.11)	1.79
3	Interacts with small group, task	.03	(.03)	.05	(.07)	1.11
4	Interest with full-time student, task	.20	(.08)	.20	(.07)	.22
5	Asks questions, task	.08	(.03)	.08	(.02)	.01
6	Offers help	.005	(.005)	.004	(.002)	1.50
7	Responds to student's question, task	.03	(.02)	.03	(.02)	.65
8	Lectures or explains, task	.26	(.14)	.23	(.11)	1.56
9	Provides praise or acknowledgement, task	.04	(.02)	.04	(.02)	.51
10	Provides supportive feedback, task	.03	(.05)	.02	(.02)	1.24
11	Provides nonsupportive feedback, task	.004	(.005)	.005	(.004)	.71
12	Monitors students seatwork	.05	(.06)	.06	(.06)	.87
13	Negative comments	.002	(.002)	.001	(.002)	.51
14	Passive comments	.007	(.01)	.007	(.01)	.07
15	In classroom organization, with student	.09	(.04)	.12	(.054)	2.89**
16	Socializes, with students	.01	(.007)	.01	(.009)	.54
17	In classroom organization, without student	.19	(.09)	.21	(.10)	.81
18	Academic instruction	.45	(.09)	.40	(.11)	2.05*
19	Behavior management	.02	(.01)	.02	(.02)	.64
30	Student initiates interactive, task	.03	(.03)	.05	(.03)	.56
31	Student responds, task	.09	(.05)	.09	(.03)	.93
32	Teacher does not respond, task	.000	(000	.000	(000	1.11
33	Student recites, task	.01	(.03)	(.02)	(.02)	.79
34	Student does not respond, task	.01	(.02)	.01	(.01)	1.57
35	Teacher interacts with individuals, task	.21	(.08)	.20	(.07)	.98
36	Teacher praise, nontask	.001	(.001)	.001	(.001)	.98

*P < .05
**P < .01

less time in classroom organization. Both observations were conducted during academic instruction; therefore these differences should not be an artifact of the type of instruction occurring when the observations were conducted. For this analysis, 26 t-tests were computed, and by chance, we would expect 1.3 *t* values to reach a level of statistical significance. Therefore, these results must be interpreted with caution; however, the results obtained for Variables 15 and 18 both suggest that more academical instruction occurs when the handicapped student is in the classroom.

These results suggest that the regular education teachers who participated in this study were able not only to maintain their normal amount of academic instruction when the mainstreamed student was present, but they increased the time devoted to academic instruction. An argument could be presented that the presence of the observer could have influenced the teachers' on-task behavior during the observations. The influence of an observer is a problem for both the physical and social sciences and, currently, there is no definitive answer to this question. In this study, each observer conducted approximately 35 different observations when the student was in the room and 28 observations when the student was not in the room. During the classroom visits, both adult-focus and child-focus observations were conducted, and the teacher was not told who was being observed. If the observations were to reflect the observer's presence, the teacher would have had to adjust his or her behavior during every observation period, that is, the teacher would have to behave differently during the 30 observations when the student was in the room and readjust behavior during the 24 observations when the student was not in the room. Usually, observations when the handicapped student was in the room were conducted on the same day as observations when the student was not in the room. Therefore, the teacher would need to have adjusted and readjusted during the same school day. Because teachers must attend to a multitude of details, it is highly improbable that they would be concentrating on the observer's presence to the degree that they could consistently change their behavior.

An alternative, more likely, interpretation would be that the handicapped student's presence, rather than the observer's presence, influenced the behavior of the teacher. When the student was in the room, the teacher was more concerned about the use of instructional time and maintaining order in the classroom.

Question 3.2 - Does nonhandicapped students' behavior that occurs when the handicapped student is in the regular classroom differ from that which occurs when the handicapped student is not in the regular classroom?

The observation of the nonhandicapped students offer another way of determining the differences in the classroom environment when the mainstreamed student is present and when the student is not present. Table 19 presents the means and standard deviations for the three achievement levels of nonhandicapped students. These variables represent the data collected during student observations. Because four mainstream classes did not have students who met our criterion for high-achieving students, only 17 classes are represented for the high achieving group.

Separate t tests were computed for each variable for each of the three groups of students. Of the 54 t tests, only one reached a level of statistical significance; by chance, however, we could expect at least three signficant t value. Therefore, this result must be interpreted with caution. The low-achieving group of students were more often off-task, noninvolved (Variable 71) when the mainstreamed student was not in the room. The t value for student atttending to group instruction, task, (Variable 57) reached a level of probability of .07; while this is not statistically significant, it does indicate the same general trend as Variable 71. That is, low achieving students tended to be off-task more and to attend to group instruction less when the handicapped students was not in the room. No differences in the behavior of high- and medium-achieving students are indicated.

Table 19

NONHANDICAPPED STUDENTS' BEHAVIOR WHEN THE HANDICAPPED STUDENT IS IN THE CLASSROOM COMPARED WITH BEHAVIOR WHEN THE HANDICAPPED STUDENT IS NOT PRESENT

Variable Number	Student Behavior Variables	High Achieving (N = 17 classes)					Medium Achieving (N = 21 classes)					Low Achieveving (N = 21 classes)				
		Handicapped Student in Room		Handicapped Student not in Room			Handicapped Student in Room		Handicapped Student not in Room			Handicapped Student in Room		Handicapped Student not in Room		
		$\bar{X}$	S.D.	$\bar{X}$	S.D.	t*	$\bar{X}$	S.D	$\bar{X}$	S.D.	t*	$\bar{X}$	S.D.	$\bar{X}$	S.D.	t*
57	Attends to group instruction, tasks	.35	(.15)	.27	(.18)	1.51	.34	(.16)	.28	(.19)	1.15	.29	(.17)	.19	(.13)	1.91**
58	Attends to group instruction, classroom organization	.04	(.04)	.05	(.05	1.03	.02	(.02)	.03	(.04)	1.25	.03	(.03)	.05	(.06)	1.24
59	Attends to group behavior corrections	.01	(.01)	.01	(.01)	1.01	.01	(.01)	.005	(.004)	1.38	.01	(.010	.01	(.004)	.19
60	Attends to group interactions, social	.001	(.004)	.001	(.004)	.07	.001	(.003)	.001	(.002)	1.10	.001	(.002)	.001	(.002)	.40
61	On-task, seatwork	.37	(.16)	.39	(.18)	.40	.35	(.14)	.40	(.18)	1.26	.37	(.14)	.37	(.11)	.04
62	Responds to adult's question, task	.02	(.01)	.02	(.02)	.42	.02	(.02)	.03	(.03)	.45	.02	(.02)	.03	(.03)	1.13
63	Initiates comment to adult, task	.01	(.02)	.003	(.005)	.84	.01	(.02)	.004	(.004)	.66	.01	(.03)	.003	(.01)	.64
64	Does not respond to adult's question	.01	(.01)	.01	(.01)	.87	.01	(.02)	.01	(.01)	1.13	.01	(.01)	.01	(.01)	2.65
65	Asks for help, task	.004	(.01)	.005	(.01)	1.03	.004	(.01)	.005	(.01)	.16	.006	(.01)	.01	(.01)	.38
66	Interacts with other students, task	.02	(.03)	.03	(.03)	1.02	.02	(.02)	.03	(1.04)	1.06	.01	(.01)	.02	(.03)	1.00
67	Initiates interacctions with other students, social	.03	(.02)	.04	(.04)	1.20	.03	(.02)	.03	(.03)	.44	.04	(.03)	.05	(.05)	1.62
68	Social comments to adult	.000	(.001)	.001	(.001)	1.04	.000	(.001)	.000	(.001)	1.12	.001	(.01)	.001	(.002)	.39
71	Off-task, noninvolved	.10	(.08)	.10	(.10)	.02	.13	(.11)	.12	(.10)	.46	.13	(.10)	.18	(.11)	2.16***
72	All interactions with other students	.05	(.03)	.06	(.06)	1.62	.05	(.03)	.06	(.05)	1.49	.05	(.04	.07	(.06)	1.68
79	Negative interactions	.000	(.001)	.000	(.000)	.44	.000	(.001)	.01	(.02)	1.34	.001	(.001)	.000	(.001)	.34
80	Positive interactions	.001	(.003)	.000	(.001)	.62	.002	(.003)	.002	(.005)	.17	.000	(.001)	.001	(.002)	1.42
81	Does not respond to comments, nontask	.001	(.001)	.001	(.003)	1.59	.000	(.001)	.001	(.00)	.85	.001	(.001)	.001	(.002)	.82
82	Gets instructional material organized	.03	(.03)	.04	(.04	1.00	.03	(.03	.04	(.03)	.30	.05	(.05)	.05	(.04)	.32

*t Values represent the comparison of this group mean with mean for handicapped students.

**p < .07
***p < .05

The data for teacher observation and nonhandicapped student observations (Questions 3.1 and 3.2 respectively) indicate that the presence of the handicapped student did not detract from academic instruction. Rather, the handicapped student's presence may increase the teacher's concern for the amount of academic instruction that is provided; for teachers' devote more time to academic instruction and less time to classroom organization when the handicapped student is present. The results suggest that low-achieving students are off-task less and attend to group nstruction more when the handicapped student is present.

Question 4.1 - How does the handicapped students' behavior compare with that of the regular education student?

To compare the handicapped students' behavior with the behavior of the three groups of nonhandicapped students, three separate t tests for independent groups were computed. Performing a one-way analysis of variance would have required using a test for nonorthogonal contrasts. The statistical package used for this analysis does not include that type of contrast; therefore, separate t tests were computed.

Table 20 shows that means and standard deviations of the observation variables formed from the student observations. The mean for each nonhandicapped group was compared to the mean of the handicapped group. None of the t values reached a level of statistical significance, although the t values for two variables reached a probability level of .08. Social comments to adults (Variable 68) were recorded more for the handicapped students than for the high-and medium-achieving students. The low-achieving students and the handicapped students showed similar percentages of socializing with adults. The differences between the percentage of time off-task, noninvolved (Variable 71) for the handicapped and the high-achieving students reached a .08 probability level.

Table 20

BEHAVIOR OF HANDICAPPED STUDENTS COMPARED WITH
THREE GROUPS OF NONHANDICAPPED STUDENTS

Variable Number	Student Behavior Variable	Handicapped Students (N = 21 claaass)		Nonhandicapped Student: High Achieving (N - 17 classes)			Medium Achieving (N = 21 classes)			Low Achieving (N = 21 classes)		
		$\bar{X}$	S.D.	$\bar{X}$	S.D.	t*	$\bar{X}$	S.D.	t*	$\bar{X}$	S.D.	t*
57	Attends to group instruction, task	.27	(.18)	.35	(.15)	1.52	.34	(.16)	1.30	.29	(.17)	.20
58	Attends to group instruction, classroom organization	.03	(.02)	.04	(.04)	.49	.02	(.02)	1.74	.03	(.03)	.28
59	Attends to group behavior, corrections	.004	(.006)	.01	(.010	1.45	.01	(.01)	1.54	.01	.01	1.02
60	Attends to group interactions, social	.001	(.002)	.001	(.004)	.62	.001	(.003)	.41	.001	(.002)	.12
61	On task, seatwork	.36	(.16)	.37	(.16)	.17	.35	(.14)	.39	.37	(.14)	.27
62	Responds to adult's question, task	.02	(.02)	.02	(.01)	1.23	.02	(.02)	.09	.02	(.02)	.50
63	Initiates comment to adult, task	.002	(.002)	.01	(.02)	1.16	.01	(.02)	1.17	.01	(.03)	.85
64	Does not respond to adult's question	.01	(.02)	.01	(.01)	1.12	.01	(.02)	.26	.01	(.01)	.57
65	Asks for help, task	.004	(.003)	.004	(.005)	.00	.004	(.007)	.44	.006	(.008)	.93
66	Interacts with other student, task	.02	(.03)	.02	(.02)	.42	.02	(.02)	.29	.01	(.017)	.93
67	Initiates interactions with other students social	.04	(.03)	.03	(.02)	1.74	.03	(.02)	.83	.04	(.03)	.06
68	Social comments to adult	.001	(.002)	.000	(.001)	1.88**	.000	(.001)	1.84**	.001	(.005)	.17
71	Off-task noninvolved	.16	(.10)	.10	(.07)	1.81**	.13	(.11)	.80	.13	(.10)	1.06
72	All interactions with other students	.05	(.03)	.05	(.03)	.64	.05	(.03)	.58	.05	(.04)	.43
79	Negative interacions	.000	(.001)	.000	(.001)	.08	.000	(.001)	.39	.001	(.001)	.72
80	Passive interactions	.001	(.002)	.001	(.003)	.60	.002	(.003)	.47	.000	(.001)	1.64
81	Does not respond to comments, nontask	.001	(.001)	.006	(.001	1.77	.001	(.001)	.64	.001	(.001)	.74
82	Gets instructional material organized	.03	(.03)	.03	(.03)	.41	.03	(.03)	.24	.05	(.05)	1.25

*t Values represent the comparison of this group mean with mean for handicapped studens.

**p < .08.

A greater difference than indicated would be expected between off-task behaviors of the handicapped and high-achieving students. One explanation for this small difference is the technique used for recording off-task behavior. The means for this variable reflect the average percent of off-task behavior over an instructional period. During our visits in classrooms, we observed that high-achieving students show different work patterns than do low-achieving students. The former group tend to begin working immediately after the teacher has given an assignment, and display a high level of task persistence until they have completed the assignment. Once the assignment is completed, high achieving students might wait until the other students are finished or the teacher gives another assignment. Students who are not as achievement oriented show more sporadic behavior when working on independent assignments. They tend to be slower in beginning to work on the assignment and once they do begin, they will fluctuate between working and stopping. As the time draws closer to the end of the activity period, however, they usually work quite diligently. By this time, the high achieving student has finished the assignment and is waiting for the teacher to announce the end of the activity period. Therefore, while the total amount of off-task time may be similar for the different groups of students, the sequence of work patterns will be quite different. A detailed sequential analysis of student behavior would be needed to investigate the work patterns of the four groups of students. Such an analysis was beyond the time and funding constraints of this study.

Although the t values comparing handicapped and nonhandicapped students did not reach a probability level of .05, the means for the four groups indicate differences in attending, task (Variable 57); socializing with adults (Variables 67 and 68); and off-task behavior (Variable 71). More differences are shown between the handicapped and high-achieving students than between the medium- or low-achieving students. The data indicate that when the handicapped student is in the regular classroom, the student's behavior is similar to the medium- and low-achieving students.

The results regarding the behavior of the four student groups are summarized in Table 21. The handicapped student does spend less time in academic work than do the nonhandicapped students; however, the differences between the handicapped student and the low-achieving student are small (2% of a 1-hour instruction period). The handicapped student spends more time in noninvolvement, but less time in nonacademic activities, which are usually the kind of activities disruptive to the class.

Question 4.2 - Does the handicapped students' behavior in the regular classroom differ from that in the special education class?

Data from the handicapped student-focus observations conducted in the special day class and in the regular education class were used to compare the students' behavior under the two instructional settings (observation types 3.0 and 6.0). Because the observations involved different teachers and different classroom environments, regular education classrooms would not be an appropriate unit of analysis. Therefore, the student was used as the unit of research question and the sample size was increased to 29 students. Table 22 shows the average percent score for each of the student-focus observation variables. Dependent *t* tests were computed for each variable.

Of the 39 variables, 18 of the *t* values reached a level of statistical significance. One could expect a large number of differences between the two classrooms. The smaller class size and availability of aides in the special day class allows the teacher to organize the classroom differently from the regular education classroom. The percentage scores for Variables 51 and 57 reveal the differences between the class structure of special and regular education classrooms. Individual interactions with the adult (Variable 51) are significantly higher in the special day class and the student spends more time attending to large group instruction (Variable 57) in the regular education classroom.

Table 21

DISTRIBUTION* OF CLASS TIME FOR HANDICAPPED AND NONHANDICAPPED STUDENTS

Activity	Handicapped Student in Special Day Class (N=29 students)	Handicapped Student in Regular Education Class			
		Handicapped (N=29 students)	Low Achieving (N=29 students)	Medium Achieving (N=29 students)	High Achieving (N=25 students)
Academic	.69	.70	.72	.74	.76
Non-Academic	.19	.12	.14	.14	.13
Noninvolvement	.12	.17	.13	.11	.11

*Rounding can result in totals not equal to 100.

Table 22

BEHAVIOR OF HANDICAPPED STUDENT IN THE REGULAR EDUCATION CLASS COMPARED WITH BEHAVIOR IN THE SPECIAL DAY CLASS
(N = 29 students)

Variable Number	Instructional Practice	Regular Education Classroom		Special Day Class		
		$\bar{X}$	S.D.	$\bar{X}$	S.D.	t
37	Adult asks student question, task	.007	(.006)	.02	(.02)	4.87
38	Student receives offer of help from adult	.001	(.001)	.001	(.001)	.02
39	Student receives response from adult, task	.003	(.0020	.006	(.004)	4.27*
40	Student receives explanation from adult, task	.009	(.012)	.03	(.04)	3.27*
41	Student receives praise from adult, task	.006	(.006)	(.01)	(.01)	3.59*
42	Student receives praise, nontask	.000	(.000)	(.001)	(.001)	4.11*
43	All praise	.005	(.006)	.015	(.011)	3.99*
44	Student receives supportive feedback, task	.005	(.009)	.008	(.007)	1.81
45	Student receives nonsupportive feedback, task	.004	(.007)	.007	(.01)	1.36
46	Adult does not respond to student question	.004	(.001)	.001	(.001)	2.56*
47	Student receives negative comments from adult	.001	(.004)	.000	(.001)	.91
48	Student receives positive comment from adult	.001	(.001)	.001	(.001)	.79
49	Student receives social comment from adult	.001	(.0010	.002	(.002)	2.31*
50	Student receives explanations classroom organization	.004	(.006)	.011	(.007)	4.69**
51	All academic instruction from adult	.03	(.021)	.09	(.05)	5.98**
52	Student receives behavior corrections	.001	(.002)	.004	(.003)	4.04**
53	Teacher places student at desk, alone	.16	(.16)	.19	(.14)	.85
54	Teacher places student at table with others	.20	(.19)	.09	(.14)	4.04**
55	Teacher places student in a comparative group	.02	.04	.03	(.04)	.59
56	Teacher places student in a teacher directed activity	.55	(.19)	.60	(.18)	1.27

*p < .05
**p < .01

Table 22 (concluded)

Variable Number	Student Behavior Variable	Regular Education Classroom $\bar{X}$	Regular Education Classroom S.D.	Special Day Class $\bar{X}$	Special Day Class S.D.	t
57	Attends to group instruction task	.27	(.17)	.17	(.12)	2.63*
58	Attends to group instruction classroom organization	.03	(.02)	.04	(.04)	.26
59	Attends to group behavior corrections	.004	(.002)	.01	(.004)	1.25
60	Attends to social interactions	.001	.002)	.001	.003	.17
61	On-task, seatwork	.36	(.16)	.36	(.15)	.11
62	Responds to adult's question, task	.02	(.02)	.06	(.05)	4.07*
63	Initiates comment to adult, task	.002	(.003)	.009	(.009)	3.96*
64	Does not respond to adult's questions	.01	(.01)	.004	(.005)	2.99*
65	Ask for help, task	.004	(.003)	.008	(.004)	5.61*
66	Instructs with other study, task	.02	(.02)	.02	(.02)	.51
67	Initiates interactions with other students, social	.04	(.03)	.03	(.02)	.97
68	Social comments to adult	.001	(.002)	.005	(.006)	3.63*
71	Off-task noninvolved	.16	(.11)	.12	(.08)	2.12*
72	All interactions with other students	.05	(.03)	.05	(.03)	.40
79	Negative interactions	.000	.001	.001	.001	.28
80	Positive interactions	.001	(.002)	.002	(.003)	.36
81	Does not respond to commands, nontask	.001	(.001)	.001	(.002)	.56
82	Gets instructional material organized	.03	(.03)	.04	(.03)	1.13

*$p < .05$

Although the two classrooms differ in these two variables, when the scores for specific variables are summarized, similarities are apparent between the two classes. Table 23 shows the total percentage of time spent in interactive instruction, independent seat work, noninvolvement, and nonacademic activities. The differences in total academic time is only 1% between the two classes; for off-task behavior the difference is 5%. These figures indicate that although the special education students spend more time in noninvolvement in the regular classroom, they devote a similar amount of time in academic instruction in the two classrooms. It appears that in the special day class, the student is less noninvolved and spends more time in socializing with adults (Variable 68), getting materials organized (Variable 82), and receiving behavior corrections (Variable 52). Therefore, the differences between the two classrooms seems to reflect what the students are doing when not involved in academic instruction; that is, whether they are noninvolved when off-task or active when off-task.

In summary, the amount of time that the handicapped student was observed in academic instruction was similar in both instructional settings. The main difference observed is in the type of student off-task behavior. This difference can be important to teachers; a student who is noninvolved is less disruptive to the class than a student who is off-task and socializing, sharpening pencils, or moving materials around.

Question 4.3 - Do teachers interact differently with nonhandicapped and handicapped students?

Student observation data were used to identify differences in teacher interactions among the four groups of students. The variables listed on Table 24 indicate interactions that were directed to the focus student, and do not reflect teaching processes directed to the class in general. The only exception was teacher questions (Variable 57), which reflects questions directed to the student both individually and as part of a group.

Table 23

DISTRIBUTION OF CLASS TIME FOR HANDICAPPED STUDENTS
IN THE REGULAR EDUCATION CLASS AND IN THE SPECIAL DAY CLASS
(N = 29 students)

Activity	Variable	Percent of Time in Activity: Regular Education Class		Special Day Class	
Interactive Instruction	51 Instruction to student	.03		.09	
	57 Attends to group instruction	.27		.17	
	62 Responds to adult question, task	.02		.06	
	63 Initiates comment to adult, task	.002		.009	
	Total Interactive Instruction		.34		.33
Independent	61 On-task, seatwork		.36		.36
Noninvolvement	71 Off-task	.16		.12	
	64 Does not Respond	.01		.004	
	Total Noninvolvement		.17		.12
Nonacademic	49 Receives comments from adult, social	.001		.001	
	50 Receives explanation organization	.004		.011	
	52 Receives behavior correction	.001		.004	
	58 Attends, organization	.03		.04	
	59 Attends, behavior correction	.004		.01	
	60 Attends, social	.001		.001	
	68 Social to adult	.001		.005	
	72 Interactive, other students	.05		.05	
	82 Gets materials organized	.03		.04	
	Total Nonacademic		.12		.19
Total Time*			.99		1.00

*Rounding results in totals not equal to 100.

Table 24

INSTRUCTIONAL PRACTICES USED WITH HANDICAPPED STUDENTS
COMPARED WITH THOSE USED WITH NONHANDICAPPED STUDENTS

Variable Number	Instructional Practice Variable	Handicapped Students (N = 21 classes)		Nonhandicapped Student: High Achieving (N = 17 classes)			Nonhandicapped Student: Medium Achieving (N = 21 classes)			Nonhandicapped Student: Low Achieving (N = 17 classes)		
		X	S.D.	X	S.D.	t***	X	S.D.	t***	X	S.D.	t***
37	Adult asks student questions, task	.007	(.007)	.002	(.002)	2.78**	.004	.006	1.29	.006	(.007)	.33
38	Student receives offer of help from adult	.001	(.001)	.000	(.001)	2.98**	.000	(.001)	2.23*	.001	(.002)	.11
39	Student receives response from from adult, task	.003	(.002)	.002	(.002)	2.31**	.01	(.02)	.25	.003	(.01)	.01
40	Student receives explanation from adult, task	.009	(.011)	.003	(.003)	2.23**	.01	(.02)	.25	.003	(.01)	1.95*
41	Student receives praise from adult, task	.006	(.006)	.003	(.003)	2.03**	.003	(.004)	1.43	.004	(.003)	1.20
42	Student receives praise, nontask	.000	(.000)	.000	(.000)	1.56	.000	(.000)	1.02	.000	(.001)	.29
43	All praise	.005	(.005)	.001	(.001)	3.57**	.001	(.002)	3.17**	.002	(.003)	2.43**
44	Student receives supportive feedback, task	.006	(.009)	.001	(.001)	2.79**	.001	(.002)	2.33**	.004	(.008)	.76
45	Student receives nonsupportive feedback, task	.004	(.005)	.000	(.00)	3.28**	.001	(.001)	2.77**	.000	(.001)	3.02**
46	Adult does not respond to student question	.0009	(.000)	.001	(.002)	.79	.001	(.001)	.73	.001	(.0020	.80
47	Student receives negative comments from adult	.001	(.003)	.000	(.000)	1.06	.000	(.000)	.89	.000	(.000)	1.06
48	Student receives positive comments from adult	.000	(.000)	.0001	(.002)	.22	.000	(.001)	.40	.000	(.001)	.65
49	Student receives social comments from adult	.001	(.001)	.000	(.000)	3.20**	.000	(.0010	1.56	.000	(.001)	.93
50	Student receives explanations classroom organization	.003	(.003)	.003	(.003)	.28	.002	(.004)	.46	.003	(.004)	.01
51	All academic instructions from adult	.03	(.022)	.01	(.006)	4.35**	.02	(.02)	1.38	.02	(.02)	1.62
52	Student receives behavior corrections	.001	(.002)	.001	(.002)	.00	.000	(.001)	1.57	.001	(.0010	.28
53	Teacher places student at desk, alone	.16	(.139)	.25	(.21)	1.51	.21	(.20)	.34	.22	(.20)	1.14
54	Student places student at table with others	.19	(.20)	.12	(.18)	1.24	.14	(.17)	.92	.19	(.19)	.10
55	Teacher places student in a comperative group	.02	(.03)	.01	(.020	.95	.01	(.01)	1.77	.01	(.03)	.62
56	Teacher places student in a teacher directed activity	.56	(.21)	.56	(.21)	.00	.58	(.17)	.30	.50	(.18)	1.11

*p < .05
**p < .01
***t Values represent the comparison of this group mean with mean for handicapped students.

Table 24 presents the means and standard deviation for each of the four groups of students. Separate t tests were computed for each of the three comparisons. A one-way analysis of variance was not performed for the same reason as given in the analysis section research question 4.1. The t tests indicate that teachers do interact differently with handicapped and nonhandicapped students. The difference between the handicapped and high-achieving students is striking. Of the 20 variables listed, 10 of the t values reached a level of statistical significance. Teachers tend more often to ask the handicapped students task questions (Variable 37); offer help, (Variable 38); respond to the student's question (Variable 39); provide task explanations (Variable 40); provide praise (Variables 41 and 43); provide supportive corrective feedback (Variable 44); provide nonsupportive feedback (Variable 45); and socialize with the student (Variable 49). In general, handicapped students received three times more individual academic instruction (Variable 51) than did high-achieving students. Some differences also were seen between teacher interactions with the medium- or low-achieving students.

These variable means reveal the small percentage of class time that one student receives individulal instrucion from a teacher. Because the means indicated for Variable 51 include group questions to the student, interactions directed specifically to one student would be fewer. Table 23 shows that during student-focus observations, teachers interacted individually with the focus student between 1 and 3% of the classtime. Although this pecentage seems small, if the class size is taken intc account, it is reasonable. If a teacher devotes 2% of class time to each student in a class of 30 students, this would account for 60% of the time. On the average, 24% of class time is devoted to instruction of the entire class or to groups and 9% is devoted to explaining assignments to the class. Thus, the total for individual instruction, class or group instruction, and explanation of assignments would be 94%; only 6% would be left for student responses or recitation. However, the means from the adult observations indicate that on the average, student responses and recitation

account for approximately 15% of class time, so allowing only 6% for student talk would not be reasonable. In addition, these figures do not allow for any time in behavior management, socializing with students, or for classroom management without students.

Analyzing the class time in this manner helps one to appreciate the amount of time that the teachers in this sample devoted to the handicapped student. If the teacher is concerned with providing appropriate instruction for all students in the class, it seems these teachers were devoting the maximum amount of available time to the handicapped student. As revealed in Table 23, when the handicapped student is in the room, the teacher tends to devote less time to individual instrucion with the high- and low-achieving students. Some of the frustration that the regular education teachers express might be caused by feeling that they must devote less time to their other students when the handicapped student is in the room.

Question 4.4 - Are teachers' attitudes related to the instructional practices that they use with the handicapped student?

An analysis was conducted to determine if teachers' attitudes towards special education students are related to the teachers' interaction with those students. The twelve items from the teacher questionnaire measuring teacher expectations were combined to form a general measure of teacher attitude toward special education students. The reliability test of internal consistency for the twelve items showed an alpha coefficient of .80. The general measure of teacher attitude was correlated with the teaching processes variables from the observations of the handicapped student (observation type 3.0). These variables identified teacher processes directed toward the handicapped student specifically. The twenty correlations computed are shown in Table 25.

Table 25

RELATIONSHIP BETWEEN TEACHER ATTITUDE
AND TEACHING PROCESSES
(N = 20)

	Instructional Practice Variable	r
37	Adult asks student question, task	-.16
38	Student receives offers of held from an adult	-.30
39	Student receives responses to question from adult, task	-.30
40	Student receives explanation from adult, task	-.13
41	Student receives praise or acknowledgement from adult, task	-.14
42	Student receives praise or acknowledgment from an adult, nontask	-.16
43	All praise and acknowledgment from adult	-.14
44	Student receives supportive feedback from adult,task	-.26
45	Student receives nonsupportive feedback from adult, task	.65*
46	Adult does not respond to student question	-.11
47	Student receives negative comment from adult	-.07
48	Student receives positive comment from adult	-.05
49	Student receives social comments from adult	-.22
50	Student receives explanations from adult about organization	-.02
51	All academic instruction student receives from adult	-.32
52	Student receives behavior corrections from adult	-.14
53	Teacher places student at a desk or table, alone	-.11
54	Teacher places student at a table with other students	-.07
55	Teacher places student in a cooperative group	.86*
56	Teacher places student in a teacher-directed activity	-.05

*$p < .001$

Of the twenty correlations, two reached a probability level of .001. The directions of the non-significant correlations indicate that the higher the teacher's expectations of special education students the less teachers interact with these students. The two significant correlations show a positive relationship: student receives nonsupportive feedback (Variable 45) and student placed in a cooperative task (Variable 55). These two correlations indicate that the higher the teacher's expectation, the more nonsupportive feedback they provided, and although the correlation was not statistically significant, teachers provided less supportive feedback (Variable 44). Teachers with high expectations tend to place the special education student in a classroom situation requiring sharing and cooperation with other students. In general, these correlations indicate that when teachers' attitudes or expectations are higher, they tend to interact less with the special education students and to be less supportive.

V SUMMARY OF FINDINGS AND RECOMMENDATIONS

Analyses were conducted that addressed the four research objectives of this study. The findings of those analyses are discussed in this chapter. The research findings are translated into recommendations for teachers and principals who are seeking to improve the mainstreaming program in their schools.

Instructional Practices Related to the Behavior and Attitudes of Handicapped Students

Major Findings

The results of these analyses suggest that certain instructional practices are related to: student academic involvement, student social interactions, and student attitudes. The types of instructional practices related to student academic involvement reflected a direct teaching method in which the teacher presented information, questioned students, and provided supportive feedback. When teachers provided oral instruction and attempted to involve the students in a question-and-answer activity, the handicapped students were more involved in the academic instruction. During the recitation activity, the teacher did not need to direct a disproportionate number of the questions toward the handicapped student, for the instructional practices directed to the class as a whole or to other students were related to the handicapped students' involvement in the instructional activity.

In classrooms where teachers provided a more supportive instructional climate, the handicapped students were more involved. When teachers helped students to correct an incorrect response by probing or rephrasing the question, the handicapped students responded more to the teachers' questions and attended to group instruction more. When teachers were nonsupportive after an incorrect response, that is, did not help the student to correct the answer, handicapped students tended not to respond and attended less to group instruction. In classrooms where teachers asked students if they needed help, the handicapped student paid more attention to the group instruction and more often asked for help. When teachers interacted negatively with students, the handicapped student was involved in more negative interactions with other students.

Instruction directed to the entire class or to groups of students was positively related to the handicapped student's involvement. The teacher's interaction with individual students was not related, either positively or negatively to the handicapped student's involvement. The percentage of time teachers were noninvolved with students was positively related to the students noninvolvement. In classrooms where teachers assigned more independent seatwork and were noninvolved with the students, the handicapped student tended to be noninvolved in the academic assignment. The handicapped students in those classrooms also showed more nonresponses to teachers' questions.

In short, the instructional practices identified in this study as desirable for students' academic involvement are similar to those emerging as desirable from previous research with nonhandicapped students on the relationship between instructional practices and student achievement.

The frequency of the handicapped students' social interactions was also related to instructional practices. When teachers offered help and provided supportive corrective feedback, handicapped students tended to interact socially with the teacher. The frequency of the teacher's social interactions was not, however, related to the handicapped students' social interactions. These results suggest that an appropriate instructional

environment will facilitate not only desirable academic behavior but the students' social behavior as well.

Handicapped students' attitudes toward the class was related to their behavior. In classrooms where handicapped students attended more frequently to group instruction and stayed more on-task, the same students reported more positive attitudes. In classrooms where handicapped students did not respond to teachers' questions or had their behavior corrected, the students reported more negative attitudes toward the class. These results suggest that handicapped students prefer a classroom where they are active learners and the class is structured in a way that will facilitate their desirable classroom behavior.

Recommendations to Teachers

Because these findings are based on correlational data, causal relationships can not be inferred. We can report only that a certain student behavior systematically increased or decreased with the frequency of a certain teacher behavior. We have translated these relationships into recommendations for teachers. The assumption underlying these recommendations is that as the teacher provides the type of instructional setting positively related to a desired student behavior, that student behavior will increase.

When the handicapped student is in the room, the regular education teacher should attempt to:

- Direct instruction to the entire class or groups of students.
- Involve all students in the instruction by asking questions and providing praise and feedback that is both corrective and supportive.
- Occasionally ask students whether they understand the lesson or need help.

- Minimize the amount of time spent in classroom organization, but provide concise instructions about the activity.
- Avoid nonsupportive feedback.
- Minimize being away from the students in the classroom.
- Minimize the amount of time spent in nonverbal monitoring.
- Avoid negative comments and make positive comments.
- Keep interactions short when they occur with individual students.
- Reduce the need for behavior corrections by using the instructional practices associated with desirable student behavior.

Program Structure

Major Findings

Mainstreaming programs can be established that facilitate students' academic involvement and social integration on the school playground. Three types of program structure were identified in this study. (a) Subject-based programs resulted in more involvement of the handicapped student in the academic instruction. Teachers in such programs used more of the identified effective instructional practices. (b) On the other hand, students in the homeroom program reported a higher degree of socializing with regular education students. (c) Student-specific programs seemed to be unassociated with either academic or social outcomes.

Recommendations to Principals

An effective mainstreaming program requires the commitment of all teachers in the school. To ensure this commitment, the principal needs to provide the necessary administrative support for organizing the program. The types of programs that showed effective results in this study required a schoolwide schedule that accommodated the schedule of the student's mainstreaming. Administrative support was necessary to establish such a schedule.

Teachers in the subject-based program, associated with greater academic involvement of the handicapped student, were accountable for the students' learning and often assigned the students' report card grades. In the homeroom program, associated with greater social integration of the handicapped students, such students were included in the class roll for the regular classroom, and were considered part of that class for social functions, field trips, or school assemblies. In this kind of program, the handicapped students had their own desks in the regular classrooms. Two special education teachers in the student-specific programs reported that their students were not given a desk to sit at when they were in the regular education classroom

The special education teachers should not be expected to "knock on classroom doors" and have to negotiate favors for every student who is accepted into a regular education classroom. Some of the special education teachers in student-specific programs reported that they were expected to perform clerical duties for the regular education teacher in exchange for the handicapped student being accepted into the regular classroom. That type of situation militates against the professionalism of both types of teachers.

The effectiveness of a mainstreaming program can be facilitated when principals provide specified kinds of administrative support. The principal's involvement can increase the professional commitment of the regular education teacher to the education of the handicapped student.

The Degree to Which the Handicapped Students' Presence Distracts from Academic Instruction

The results of this study suggest that the presence of handicapped students does not distract from the amount of time spent in academic instruction. In fact, regular education teachers spent more time in academic instruction and less time in classroom organization when the handicapped student was present. Low-achieving students showed more on-task behavior when the handicapped student was present.

The results of this study are contrary to regular education teachers' reports that the presence of the handicapped student distracts from the time spent in academic instruction. Perhaps the presence of the handicapped student increases the teacher's awareness of how the class time is spent, and, consequently, the teacher is more task-oriented when the handicapped student is in the room.

Differences between the Behavior of Handicapped and Nonhandicapped Students

Few differences were identified between the behavior of handicapped students and nonhandicapped students. Some differences were observed between the behavior of high-achieving and handicapped students. The handicapped student's behavior was similar to the low- and medium-achieving student's.

Interestingly, little difference in academic involvement was found among the four groups of students. We had expected to identify differences in the amount of involvement for students of various achievement levels. The explanation was proposed that perhaps the work patterns of the various groups of students were different while the total amount of involved time was similar.

When the handicapped student was in the mainstreamed classroom, the teacher tended to interact less with the high-achieving students, and spent more time interacting with medium- and low-achieving students and the handicapped student. These results suggest that teachers accommodated for the time they spent with the handicapped student by spending less time with high-achieving students. Teachers could equalize the time spent with all groups of students by instructing groups of students or the entire class.

Summary

The findings of this study revealed that certain instructional practices are related to student's academic involvement. Those handicapped students who were more academically involved also reported more positive attitudes toward the class.

Mainstreaming programs that facilitated students' academic involvement and social integration on the school playground were identified. It was also concluded that the effectiveness of a mainstreaming program can be facilitated when principals provided specific kinds of administrative support.

Regular education teachers are able to incorporate the handicapped student into the class instruction without decreasing the amount of time spent in academic instruction, for when the handicapped student was in the regular education classroom, the teacher and the low-achieving student spent more time in academic tasks than when the handicapped student was in the room. Contrary to teacher expectation research indicating that teachers tend to shun the lower achieving students and spend more time with higher achieving students, the teachers in this sample interacted more often with the handicapped student than with the high- and medium-achieving students.

The findings report instructional practices that will be helpful to regular education teachers and principals seeking to improve the mainstreaming process at their schools. Regular education teachers should be encouraged by the findings that such teachers are able to remain task oriented when the handicapped student is in the room and can spend at least proportionate amounts of time with the handicapped students without disadvantage to the regular instructional program.

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APPENDIX A

Characteristics of School Districts and Sample Selection Procedures

Characteristics of School Districts

County	District	Grades Served	Total Student Population	Minority Population	Special Education Population	Number of Special Day Classes	Sample School	Sample Students
1	A**	K-12 (K-8)	9,380 (6,488)	Small Hispanic	110*	9	1 Elementary	2
1	B	K-8	943	15-20% primarily Hispanic	23*	3	1 Middle	4
1	C	K-8	1,991	1% Black	303	3	1 Elementry	1
1	D**	K-12 (K-8)	13,749 (8,207)	12% Asian, Black and Hispanic	1,284	13	1 Elementary	4
2	E	K-8	13,099	9% Asian 4% Hispanic 2% Black	1,930	54	1 Elementary	6
2	F**	K-12 (K-6)	8,256 (5,231	18% Hispanic 10% Black 6% Filipino 5% Asian 2% Am.Ind.	669	16	2 Elementary	3
2	G**	K-12 (K-6)	9,671 (5,896)	14% incl. Asian, Hispanic and Black students	850	18	1 Elementary	7
2	H**	K-12 (K-8)	14,820 (9,399)	17% Hispanic 9% Asian 2% Black 1% Am.Ind.	943	30	4 Elementary	7
2	I	K-8	5,530	21% Hispanic 9% Asian 5% Black 4% Filipino 1% Am.Ind.	669	8	1 Elementary	3

*This number does not reflect the total special education population. A significant number of students are served outside of the district through county services.

**Unified school district--Top row (K-12) shows total student population; second row shows elementary school grades and population.

SAMPLE SELECTION PROCEDURE

The selection process followed a protocol of approaching personnel at varying administrative levels within the educational system. Each step involved gaining the support and cooperation of significant individuals within a specific educational department. The process began with meetings with the county special education directors, followed by meetings with district special education directors within that county. The last group approached included principals and then special and regular education teachers at schools within the district.

If cooperation was not obtained at the first or second level, the process was terminated within that particular agency. The county directors of both counties in which we had hoped to work were cooperative. One district special education director within one of these counties was not willing to commit his district to participate in the study. In several districts, the district special education director was interested in the study, but the special education or regular education teachers could not give approval for the study. The selection process is discussed in detail below.

County Level

Meetings were held with the county special education directors of two counties. At these meetings, the objectives of the study were described, as well as the SRI observation system and the time frame of the study. Both county directors agreed to support the research effort, and agreed to recommend possible school districts for participation. These recommendations were made after the county special education directors

discussed the study with district-level special education directors. Both county directors were interested in the practical information the study might provide for regular education teachers.

District Level

Individual meetings were also conducted at the district level with special education directors who had expressed an interest in the study. The goals of the study were described, as well as the SRI observation system and project time frame.

The sample selection criteria were discussed. The original sample selection criteria sought to identify 32 third-grade* special education students placed in LH special day classes who were also mainstreamed for approximately one period a day for academic instruction. Students in LH classes in California usually are of average or near average intelligence, but are at least 2 years behind their expected grade level in key academic areas and need the structure of the special day class.

The district special education directors did not anticipate any difficulty in identifying students who met our sample criteria. After the district director had contacted elementary school principals, we received the names of schools and special education teachers that were most likely to be willing to participate in the study and that were also likely to have students meeting our sample selection criteria.

*We originally wanted our sample to consist of third-grade students because a large body of data from 150 third-grade classrooms, with which to compare the classroom process data from the mainstream classrooms, was readily available at SRI.

School Level

Our final step in securing the study sample involved meeting with special and regular teachers (and principals, when they chose to be involved). We described the goals of the study, the SRI observation system, the timelines of the study, the number of observations that would be taking place, and the student sample selection process. It was at this level that we faced the greatest difficulty in securing our study sample.

To include a mainstreamed student in our sample, we needed approval from both the special education teacher and the regular teacher, as well as the building principal. Thus, for each student included in the sample, we required consent from several different professionals. Obtaining this consent was a time-consuming process, and in some instances consent was not obtained.

There were two main categories of teachers who were unable to provide us with students appropriate for our sample. Some teachers were willing to be involved in the study but did not have students that met our specifications; others were unwilling to be involved in the study.

In the first category, we encountered difficulties in finding students of the age specified in our sample selection criteria. When we began meeting with teachers and discussing our sample selection criteria we were unable to obtain an adequate sample of third-grade students. Mainstreaming for academic classroom instruction is not frequent for special education students of this age. One explanation for this infrequency is that many students in LH special day classes are not placed into special education classes until the second or third grade. Academic mainstreaming often does not occur until a student has been in special education long enough for some academic progress to be made. Thus, third-graders were often just beginning to be mainstreamed for nonacademic classes (e.g., physical education or art) or were not being mainstreamed at all. After several weeks of unsuccessful attempts to identify an adequate number of mainstreamed third graders, we altered the sample criterion to include fourth- and fifth-grade students. This adjustment enabled us to complete our study sample.

Some teachers told us they were planning to get mainstreaming under way eventually but presently had no students mainstreamed and thus could not participate in the study. In several other instances, we found that less academic mainstreaming was taking place than district special educators had led us to believe. For example, on several occasions when we met with special educators who had been recommended because of their reputation for successful mainstreaming, we learned that mainstreaming was only taking place for physical education or was being used on a short-term basis for a special unit that might only last 3 to 6 weeks. Neither of these situations met the needs of our study. Thus, among teachers who were willing to participate but had no student who met the sample selection criteria, the following factors interfered with the sample selection process:

- Age of the mainstreamed student
- Timing of the mainstreaming
- Amount of academic mainstreaming.

Only a small minority of the teachers were unwilling to participate in our study. Nonetheless, we encountered both special education and regular teachers who refused to participate. Several special education teachers felt they were already burdening the regular teachers by asking them to take mainstreamed students into their classrooms, while others expressed a lack of interest in research. Still others were already feeling overburdened by the demands of their job and said that if participation was voluntary they chose not to participate.

APPENDIX B

Observation Training Manual

SRI International

SRI CLASSROOM OBSERVATION INSTRUMENT

TRAINING MANUAL

October 1980

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CLASSROOM OBSERVATION INSTRUMENT

FOR OBSERVING IN

MAINSTEAMED CLASSROOMS

October 1980

SRI CLASSROOM OBSERVATION INSTRUMENT

I OVERVIEW

The SRI Classroom Observation Instrument (COI) provides a record of activities that occur in the classroom and the interactions between teachers and students. The instrument was designed to be sensitive to different instructional methods, interpersonal interactions, and classroom environments. When using the observation instrument, the observer focuses on only one individual at a time and records all the interactions of that person. Either the teacher or a student may be the focus, and observations may be alternated between the teacher and individual students.

The observation instrument assesses the educational processes, which include teacher behaviors, interactions between teachers and students, and the groupings of teachers and students that occur during classroom activities.

The observation instrument contains two sections: Identification and Classroom Information, and Five-Minute Interactions. Classroom information is recorded in all of these sections, and each section will be described in detail in Section II of this manual, "Explanation of Coding Procedures."

The first section, Identification and Classroom Information, provides identification information necessary for data processing and analysis, and records the number of adults and students regularly in the classroom and the duration of the class.

The second section is the Five-Minute Interaction (FMI). The Five-Minute Interaction can be used to observe teachers in group interactions or working alone. It consists of a series of frames in which each behavior/interaction is recorded in the four categories provided: who, to whom, what, and how. Several frames that follow each other record the entire interaction, or, for single individuals, describe the observable interaction.

At the beginning of each observation booklet there is one set of each of the Identification and Classroom Information section. Subsequent pages contain five sets of the Classroom Snapshot and Five-Minute Interaction frames. The Identification and Classroom Information section is coded only once during the class period; the FMI are coded five times per class period.

The observation may be used for observing either teachers or students. The cover page of the observation booklet provides grids for identifying the target person whom is being observed. Several of the observation codes used for both student and teacher observations; while other codes are used only for either teacher observations or student observations. The specific use of each code is described in Section C of this manual.

II EXPLANATION OF CODING PROCEDURES

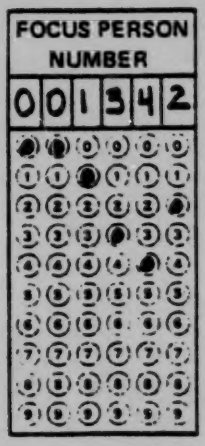
Information is recorded on the SRI Classroom Observation Instrument (COI) by filling in appropriate boxes and marking appropriate circles.

A. Identification and Classroom Information

The Identification Information section is on the first page of the COI. The coding of each of its sections is explained in the following subsections.

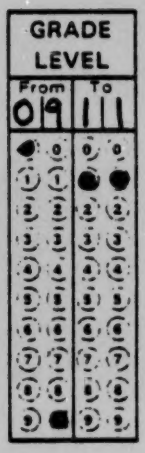
1. Focus Person Number

Each teacher observed has an identification number. Each booklet should only contain observations for the teacher identified in the Focus Person Number grid. To record the teacher number all six boxes at the top provided should be filled in and the corresponding circle marked. A teacher identification number of 1342 would be recorded as shown below.



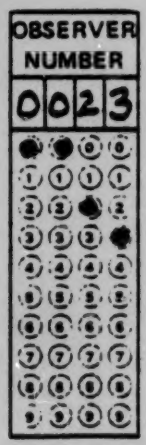
2. Grade Level

The boxes in this COI section are used to identify the range in or grade levels of the students in the classroom. The school years recorded are those of the lowest and highest grade levels in the classroom. Usually, students in the class will all be of the same grade level. If that is the case, code the same grade level in the From and To columns.



3. Observer Number

Each observer has an identification number. An observer's number is recorded on every booklet that he or she uses, as shown below.

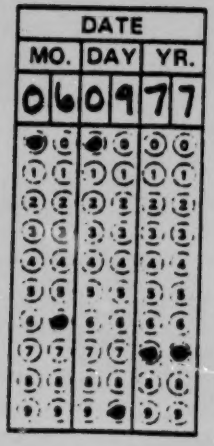


4. Observation No.

The observation period number identifies the chronological order of booklets used for observations on a specific individual. Teachers and students will each be observed for eight hours. Observation period 1 through 8 will be represented by eight different booklets. The second observation period for a specific teacher would be recorded as shown below:

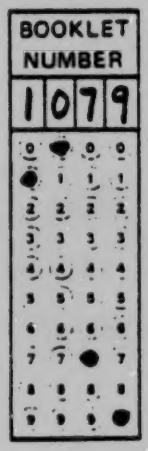
5. Date

In coding the date, all six boxes provided must be filled in. The correct method for recording June 9, 1977 is 060977, as shown below.



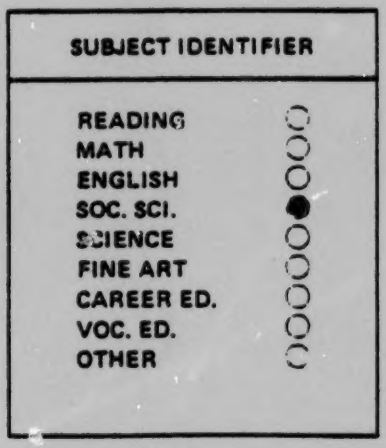
6. Booklet Number

The booklet number recorded in the grid is a unique number for each booklet. Booklet number 1079 would be recorded as shown below:



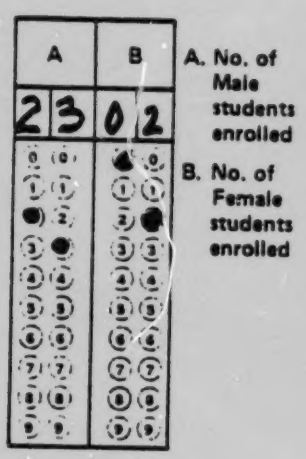
7. Subject Identifier

This grid identifies the subject that is taught during the observation period.



8. No. of Students Enrolled

The booklets provide grids to record the number of male and female students enrolled. For the purpose of this study the student enrollment will not be distinguished by sex. The A section (No. of Male Students Enrolled) will be used to record the number of students who are enrolled in the class for at least 50 percent of the school day. The B section will be used to record the number of students who are in the class for less than 50 percent of the day.



9. Focus Person Identification

Information for this subsection's four lines is written in, as shown below.

Teacher Mary Brown

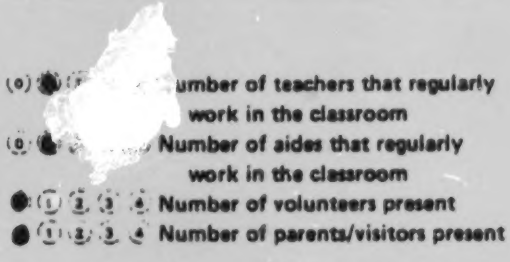
School George Washington High

City Sacramento, CA

Observer Janet Smith

10. No. of Adults in Classroom

This subsection is used to record the number of teachers and aides that regularly work in the classroom and the number of volunteers and visitors present on the day of observation. Teachers must be asked the information about number of teachers and aides.


umber of teachers that regularly work in the classroom
Number of aides that regularly work in the classroom
Number of volunteers present
Number of parents/visitors present

11. Group by ability within class

This information will not be recorded.

12. Total Class Duration

The length of time that the mainstreamed student is scheduled to be in the regular classroom is recorded in this section. If the student is scheduled to be in the room for 55 minues, the time is recorded as follows:

Total Class Duration

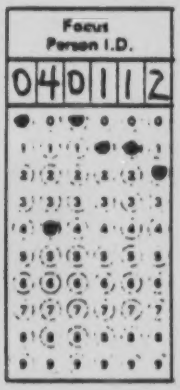
20 minutes	55 minutes
25 minutes	60 minutes
30 minutes	70 minutes
35 minutes	80 minutes
40 minutes	90 minutes
45 minutes	100 minutes
50 minutes	110 minutes
	120 minutes

B. The Five-Minute Interaction (FMI)

Three different sorts of information are recorded in the COI FMI section. First, information is recorded about the focus person, the activity engaged in, and whether there has been a change in the activity during the FMI. Second, the chronological order or the particular FMI being coded (there are five FMIs in each observation booklet) and the starting and stopping time of each FMI are indicated. Third, the interactions and activities of the focus person are recorded.

1. Focus Person Number

The focus person has a unique identification number. That number is coded in the appropriate boxes at the beginning of each COI An example is shown below.



2. FMI Sequence Number

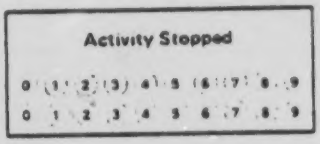
In order to keep the observation within a booklet in chronological order during the data processing, each FMI in the booklet has been assigned a sequential number. For example, the second FMI in the booklet would be coded as shown below.

3. Activity Started

The activity in which the focus person is engaged at the start of the FMI is recorded in this SOI section. The number of the activity may or may not be the same as that indicated for the focus person in the Classroom Snapshot. If the focus person is involved in Activity 07 (as defined in Section III of this manual) at the beginning of the FMI, the coding would be as shown below.

4. Activity Stopped

When the FMI is completed, record the activity in which the focus person is involved. If he/she is engaged in an activity other than that which has been recorded at the beginning of the FMI, the new activity is recorded in the Activity Stop section.

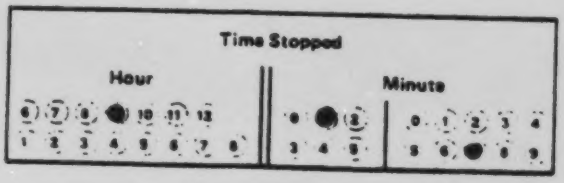


5. Time Started

A clock or watch should be checked before Time Started is recorded and the FMI is begun. In coding the time, the SOI boxes indicating the hour and minute must be filled in accurately. The Hour and Minute sections are divided as shown below. Below is shown the correct coding for 9:12.

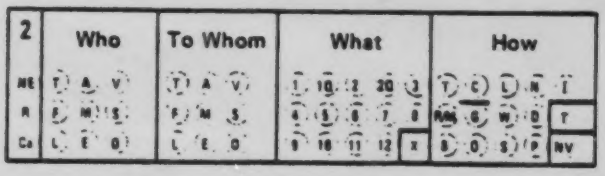
6. Time Stopped

At the end of five minutes, coding is stopped and the time is recorded in the Time Stopped box at the end of the FMI. Although it is important that the observation be completed in five minutes, it is more important to show the actual times started and stopped. If coding stops at 9:17, correct coding of that time would be as shown below.



7. Interaction Frames

Interactions in the classroom as well as student and adult behavior are recorded in the COI FMI section, which consists of identical interaction frames, such as the one shown below.



Each frame has five columns. The narrow column on the far left contains the three codes, Non-English (Ne), Repeat (R) and Cancel (Ca). These circles are marked to indicate that a language other than English is being used (Ne), that the frame should be repeated (R), or that the frame should be cancelled (Ca).

The other four columns can be strung together to form an interaction sentence: Who, To Whom, What, and How.

The Who column contains nine codes that refer to a person or a group of persons. These codes identify the initiator of the action. In the sentence methaphor, the Who codes are the subject of the sentence.

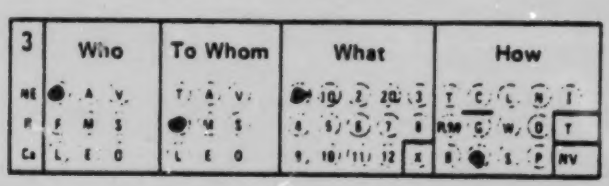
The next column, the To Whom column, contains the same nine codes as the Who column. In the interaction sentence, the codes in this column are the object of the action--the person to whom a statement or action is directed. One code is marked in the Who column and one code in the To Whom column of each frame; no more than one code may be recorded in each column.

The What column contains 14 codes which are categories of actions or behaviors. Some examples are Questions, Responses, and Praise. These codes are the verbs of the interaction sentence. Only one of the What codes is coded in each frame. In addition to these 14 codes, one other code appears in the What column. This is Movement (X) and is coded when movement occurs with the appropriate What code.

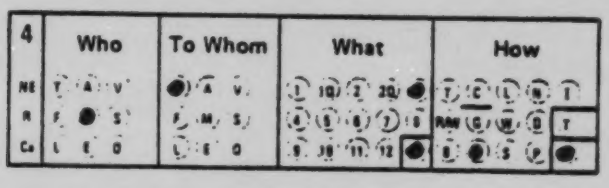
The How column contains 15 codes. These codes are considered modifiers of the interaction sentence and the number of codes marked in a frame depends upon the interaction being recorded. The various types of interactions which may be recorded will be discussed at the training session.

A complete interaction sequence will take two or more frames and will show at least the initiation of the interaction and the response or lack of response to that initiation. An example of an interaction sequence is shown below. (Definitions of the codes are included in Section IV of this manual).

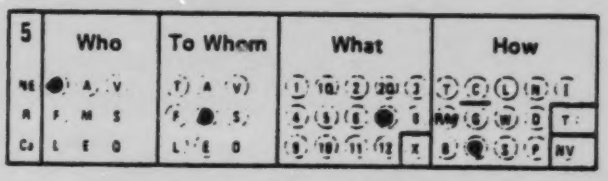
1. Teacher: "Shut the door."



2. John: Walks to the door and shuts it.



3. Teacher: "Thank you, John."



Operational definitions of the Who, To Whom, and How codes are given in Section IV of this manual. Under each What and How definition appear several typical examples of that code activity that an observer might encounter in a classroom.

IV DEFINITIONS FOR FIVE-MINUTE INTERACTION CODES

A. The Ne, R, and Ca Codes

Coded Ne, R, and Ca circles give the computer general instructions about processing interaction frames. Table 3 presents these codes.

Table 3

THE Ne, R, AND Ca CODES

Code	Item	Description
Ne	Non-English	If the interaction being observed is carried on in a language other than English, Ne is coded in the left-hand column of each appropriate frame.
R	Repeat	Code R in an interaction frame indicates that the interaction in the frame above is repeated. If the interaction or activity being observed continues without change, code R is used in the left-hand column for all frames following the initial coding until the activity stops or changes. Only R is entered; no other coding is necessary.
Ca	Cancel	When a mistake is made in coding an interaction, code Ca is marked in the left-hand column of the miscoded frame, and the observer then continues coding in the following frame.

B. The Who Column

The Who column indicates who is doing the talking or performing the action. Table 4 presents these codes.

Table 4

CODES FOR THE WHO COLUMN

Code	Item	Code Usage (Description)
T	Teacher	The one person who ultimately is responsible for the everyday conduct of the classroom--also called the focus teacher, for the purpose of this study.
A	Adult/Aide	Any adult in the classroom other than the focus teacher
V	Visitor	Any outside person who enters a classroom and interrupts a teacher with call slips, messages, and the like.
F	Regular Students	All students in the class other than the focus mainstreamed student.
M	Mainstreamed Student	The mainstreamed student who is the focus of the study.
S	Small Group	Two to six students interacting with the focus teacher.
L	Large Group	Minimum of 7 students and up to the total class minus one interacting with the focus teacher.
E	Everyone	All students present in the classroom (regardless of number) interacting with the focus teacher.
O	Object	An instructional machine or audio visual equipment.

C. The To Whom Column

The To Whom column indicates the person or group talked to or interacted with or the students' materials used. The codes used in this column are the same as the codes for the Who column and are given in Table 4.

D. The What Column

The What column indicates categories of observed actions or behaviors. The What column codes are given in Table 5.

Table 5

CODES FOR THE WHAT COLUMN

CODE	ITEM	USAGE
1	Command	Code 1 is recorded for an order or request that asks for a response free of argument. The command is related to classroom organization.
		Examples "Jim, please shut the curtains so we can get started." (T F 1 O) "Turn your desks around." (T E 1 O)
1Q	Direct Question	Code 1Q is recorded for the teacher's request for direct recall of previously learned material. A yes/no answer or some other type of specific response (such as a statement of facts, itemization, classification, or a definition) or an action is anticipated. This code is also used when the student asks for help or information.
		Examples "Do you know this word?" (T F 1Q R/M) "How many problems do we have to do?" (M T 1Q R/M) "What is wrong with problem number three?" (T E 1Q R/M)
2	Offering Help	Code 2 is recorded for an offer of help. This code may be used when teachers offer help to students or when another student offers help to the focus student. The offer may be in question, imperative or declarative form.
		Examples "Do you need help?" (T F 2 R/M) "Let me help you." (T F 2 R/M) "I would like to help you." (T F 2 R/M)
2Q	Open-Ended Question	Code 2Q is recorded for a question which allows the respondent a free expression of ideas and opinions. This code is also used for questions about an individual's feelings.
		Examples "Who was your favorite character in the story?" (T M 2Q R/M) "Don't you feel good today?" (T M 2Q C)

Table 5 (Continued)

CODE	ITEM	USAGE
3	Response	Code 3 is recorded for compliance (verbal or nonverbal) with a command (Code 1), to a question (Codes 1Q, 2, 2Q), to support/ acknowledgment (Code 7), to praise (Code 8), or to a correction (Code 9). Code 3 is not recorded automatically after a question. If a student refuses a request, Code 10N is used. If he or she does not respond, Code 10NV is recorded. If a student states that he or she does not know the answer, Code 10 is entered.
		Examples Student answers the teacher's question. (F T 3 R/M) Student stops combing her hair on request. (F T 3 B)
4	Instruction/Explanation	Code 4 is used for students reading aloud to teacher, for teacher instruction, and for students working.
		Examples Teacher giving information verbally to others; for example, reviewing lessons and lecturing. (T E 4 R/M) Student reading aloud to the teacher. (F T 4 R/M) Teacher demonstrating an activity non-verbally. (T E 4 R/M NV) Teacher discussing a student's completed assignments. (T F 4 R/M) Student working on seatwork. (F F 4 R/M NV) Teacher describing the agenda for the class period to the class. (T E 4 O)
5	Tangible Feedback	Code 5 is used when the teacher used tangible feedback for a reward. Tangible feedback includes candy, tokens and prizes. The teacher may or may not talk when giving the reward.
		Examples Teacher says "Johnny, your paper is perfect," and gives the student a token. (T F 5 R/M) Teacher gives student who is working a token. (T F 5 R/M NV)

Table 5 (Continued)

CODE	ITEM	USAGE
6	Student Statement or Activity Related Action	Code 6 is used for student comments. For activities connected with classroom instruction, 6NV is recorded. Code 6NO if a student complains about an assignment or activity. Examples Teacher has been lecturing and student comments. (F T 6 R/M) The teacher is passing out students' papers. Student comments on the section of the story that he or she just read. (F T 6 R/M) Teacher is setting up materials for students' use. (T T 6 O NV) Student says, "Miss Smith, I don't like this assignment. It's dumb." (F T 6 O N)
7	Support/Acknowledge*	Code 7 is used for statements that are supportive or show recognition, for example, an indication that a response, product, or behavior is recognized or agreed with, or for repeating another individual's statement immediately, as a form of acknowledgment. Examples Teacher repeats a student's answer as an acknowledgment. (T F 7 R/M) Teacher says to student, "That's a difficult word, but try to sound it out."* (T F 7 R/M P)
8	Praise	Code 8 is used for verbal or nonverbal approval or praise directed to responses, products, or behaviors. No tangible feedback is given. Examples Teacher says to class, "The results of your tests are superb. I'm very pleased." (T E 8 R/m) After class settles down as a result of teacher's request, he or she says, "That's better. Thank you." (T E 8 B)

*Warm and encouraging support is coded P.

Table 5 (Continued)

CODE	ITEM	USAGE
9	Correction	Code 9 is recorded for attempts by the teacher to inform student(s) that a response is not correct or that behavior is unacceptable. Examples Teacher asks student to stop combing her hair. (T M 9 B) Student has responded incorrectly to the teacher's request to spell a word. Teacher says, "No, that's not right." (T M 9 R/M)
10	No Response/Don't Know	Code 10 is used for verbal and nonverbal (for instance, shoulder shrugging) indications that an individual does not know the answer to a question. If the respondent says nothing and does not acknowledge the question, 10NV is coded. If the student verbalizes a refusal to comply, code 10N. Examples The teacher has asked the student a question to which the student replies, "I don't understand." (M T 10 R/M) Student does not respond when asked to pass out the books. (M T 10 R/M NV) Teacher asks a student to read aloud and the student refuses. (M T 10 R/M N)
11	Fidgeting/Acting Out	Code 11 is used for student off-task behavior. When the student is not involved in the assigned activity, and is fidgeting or daydreaming, use Code 11. If the student displays negative behavior, code 11N. Examples Student is flipping pages in the book, and not working on the assignment. (M M 11 R/M) Student has been working but becomes upset and throws a pencil on the floor. (M M 11 R/M N)

Table 5 (Concluded)

CODE	ITEM	USAGE
12	Observing/Listening	Code 12 is used for an adult or student who is listening to others. The use of this code reflects on-task activities. The focus person is listening to conversation related to classroom activities, e.g., not social interactions. The code is also used when the teacher is monitoring students at work. Examples Teacher is listening to a small group of students prepare a debate. (T S 12 T) Teacher observes class reading silently. (T E 12 R/M) Focus student is listening to the teacher instruct another student. (M T 12 T)
X	Movement	Code X is used when the Who of the interaction moves from one location to another. X can be recorded with any What code. Examples As the teacher is instructing, he or she is walking back and forth in the front of the classroom. (T E 4 T X) A student walks over to the teacher while asking about the meaning of a word. (M T 1Q T X)

E. The How Column

The How column gives information about the action, describing its content or effect. Table 6 details the codes for the How column.

Table 6

CODES FOR THE HOW COLUMN

CODE	ITEM	USAGE
T	Non-Academic Task	The T code is used for interactions related to classroom activities that are not academic. For an activity to be defined as non-academic, no instruction in reading, math, social studies or science is occuring. The T code involves activities such as art, music and non-academic games.
		Examples Teacher explains the procedures for an art lesson. (T E 4 T) Students are playing a non-academic game and the focus student makes a comment. (M T 6 T)
R/M	Academic Task	Code R/M is used for interactions concerned with academic activities. Academic activities are defined as reading, math, social studies, and science.
		Examples Teacher tells student, "You read that paragraph very well, Jim." (T F 8 R/M) Teacher tells student, "I know that's a difficult word but try to sound it out." (T F 7 R/M P) Teacher asks class, "What's the answer to the fifth problem?" (T E 10 R/M)
B	Behavior	B is entered for interactions related to classroom behavior (deportment), for example, correction of a student's unacceptable behavior. When a teacher is explaining rules of conduct, Code B is used with Code 4 in the What section.
		Examples Teacher says to a small group, "Everyone please be quiet so we can hear Janie read." (T S 9 B) Teacher says to student, "Mary, if you don't stop talking I'll have to ask you to leave the class." (T F 9 B N) Teacher says to class, "I want to thank all of you for being so courteous to our visitor yesterday." (T E 8 B)

Table 6 (Continued)

CODE	ITEM	USAGE
C	Conversation	The conversation code is used for interactions that are social and not related to the classroom activity. These interactions include greetings and personal compliments. Examples "Good morning, Mary. It's nice to see you." (T F 6 C) "How are you today?" (T F 2 C)
G	Guide	The G code is used any time a teacher is attempting to modify a student's behavior or academic response by guiding them to another solution, or by adding a little more information or by asking a probing question. Examples "Are you sure that Macbeth is the right answer?" (T M 9 G R) "No, the play I'm thinking of is a story of two young people who are in love but their families are enemies." (T M 9 G R) "Everyone sit down and stop talking." (T E 9 G B) (NOTE: 9G is always accompanied by a T, R/M, or a B in the How column.)
L	Lateral Work	This code is one of three codes that identifies the focus student's physical placement in the class. These three codes identify whether the student is working alone (S), working along side others (L), or working in a group cooperative task (W). The L code is used when the focus student is working along side others and each student is working on his or her own assignment. The code will usually be used when the student is sitting at a table working with other children. The code is used in addition to the appropriate Who, To Whom, What, and How codes.

Table 6 (Continued)

CODE	ITEM	USAGE
		L Lateral Work (Continued) Examples Focus student is working on a written assignment at a table with other students. (F F 4 R/M NV L) Another student asks the focus student if she needs help with the assignment. (F M 2 R/M L)
W	Working with Others	This code is used when the focus student is involved in a group task or a task that requires sharing materials or waiting for each person to have a turn. Examples Focus student is waiting for his turn in a group sharing task. (M S 12 R/M W) Focus student asks another student to pass the eraser. (M F 1 O W)
S	Solitary	This code is used when the focus student is working at his or her desk, not at a table with other students. The student is involved in a task that does not require any group sharing of materials or taking turns. Examples Focus student is sitting at her desk, working on a written assignment. (M M 4 R/M NV) Focus student is sitting at his dest, fidgeting with papers. (M M 11 N V)
O	Organizing	Organizing is used when the teacher is trying to get the class started. This includes making announcements, passing papers or books, making assignments, explaining the schedule, and when activities stop and start, defining quality and quantity of work. It also includes grading papers, cleaning the chalkboard, straightening shelvers, or dismantling necessary materials

Table 6 (Continued)

CODE	ITEM	USAGE
		O Organizing (Continued) Examples Teacher telling students to clear their desks. (T E 1 O) Teacher passes worksheets. (T E L O) Teacher telling students exactly how to organize and sequence work for the day. (T E 4 O)
P	Positive	Code P is used when there are obvious expressions of happiness, such as laughing or smiling, or when teacher or student(s) with whom the focus teacher is interacting verbally express(es), directly or indirectly, eagerness and interest in the activity. Examples Student is laughing at teacher's comment. (M T 6 L) Teacher displays a great deal of enthusiasm by laughing about a particular part of a story. (T E 4 L)
N	Negative	The N code is used for any sarcastic or demeaning statements by the teacher, and for overt displays of anger. The code also is for student complaints about the assignment, about other students, or for student hostile behavior. If the teacher punishes a student, the N code is used. Examples Student has answered incorrectly, and another student says, "What a stupid answer!" (T M 9 R/M N) Teacher threatens to keep a student in from recess. (T M 9 B N)

Table 6 (Concluded)

CODE	ITEM	USAGE
I	Ideas	The I code is used when the teacher elaborates on a student's idea. The teacher may elaborate by adding information or by asking for more information from the student.
		Examples Student has told the teacher about a television program he watched. The teacher asks the student for more information. (T M 1Q S I) Student tells the teacher about a character in a story and the teacher adds some information. (T M 4 R/M I)
T	Touch	Whenever the focus person touches the individual with whom he or she is interacting, T is used along with the other relevant What code.
		Example Teacher touches the shoulder of a student as he or she asks a question. (T M 1Q T T)
NV	Nonverbal	When the action being coded is not accompanied by words, NV is entered in the What column together with the other relevant What code.
		Example Teacher nods to student's answer. (T M 3 T NV)
X	Movement	The X code is used to indicate movement from one location to another. Simply moving the arms or torso is not considered movement. This code is used to indicate movement by the individual who is coded in the Who section.
		Examples Teacher moves across the room while lecturing. (T E 4 R/M X) Student walks to the teacher's desk in response to the teacher's command. (M T 3 O NV X)

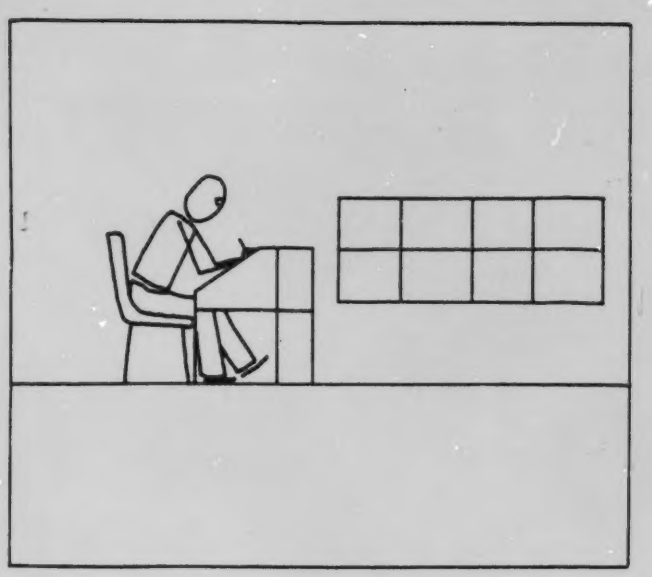
APPENDIX C

QUESTIONNAIRES

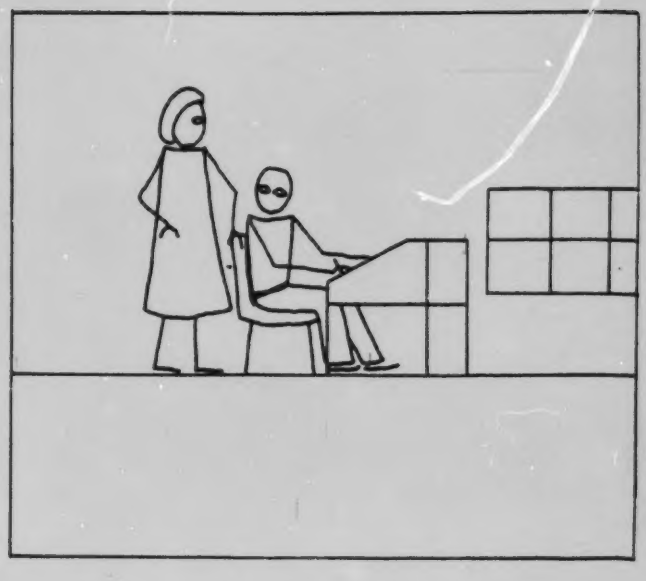
STUDENT QUESTIONNAIRE

STUDENT IDENTIFICATION NUMBER _____

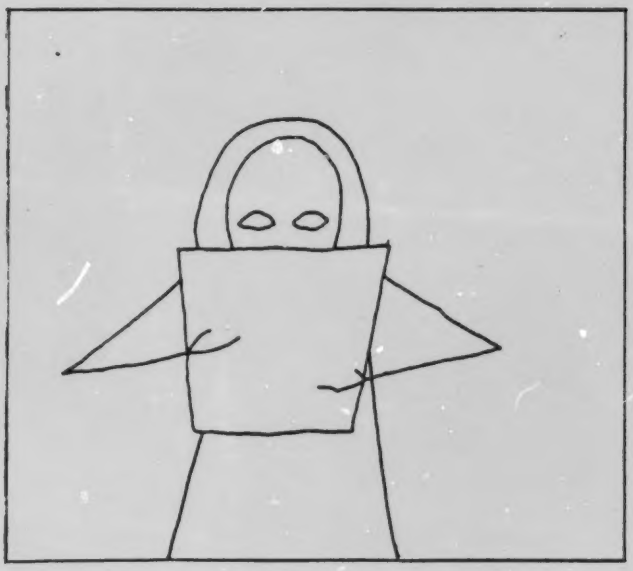
SCHOOL _____



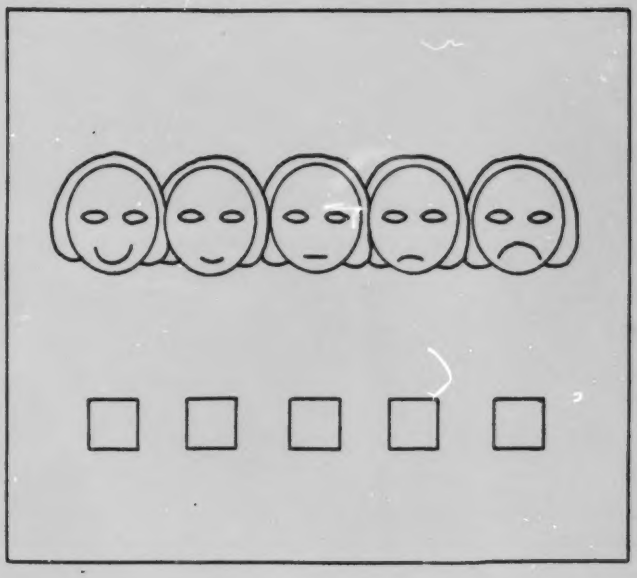
MARK IS WORKING IN _____ CLASSROOM.



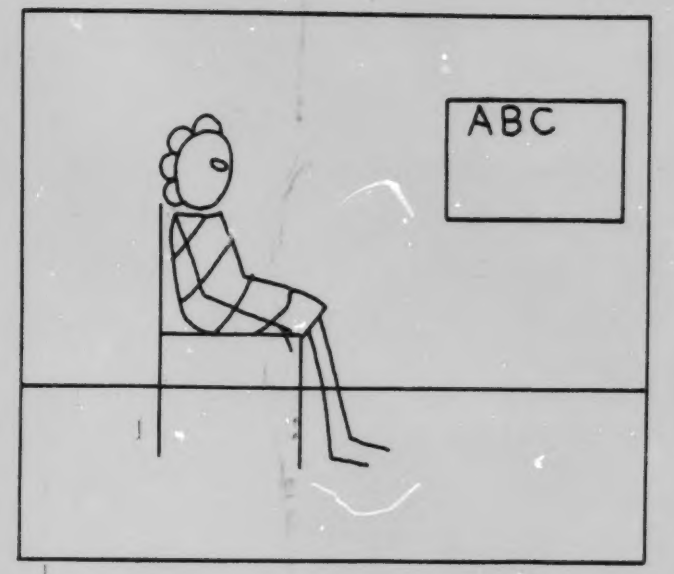
THE TEACHER COMES OVER.



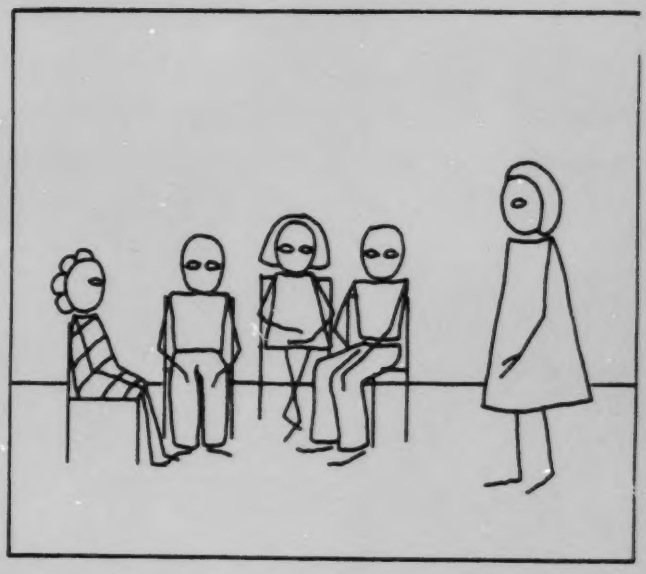
SHE LOOKS AT MARK'S WORK.



WHICH ONE IS THE TEACHER'S FACE?

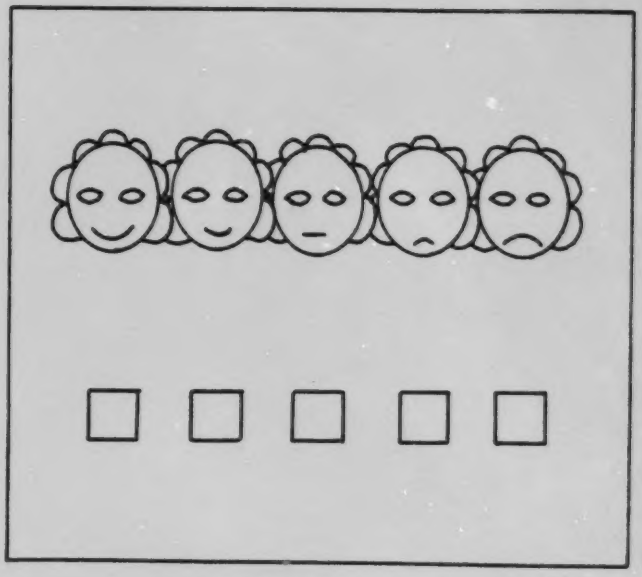


MARY IS IN _____ CLASSROOM.

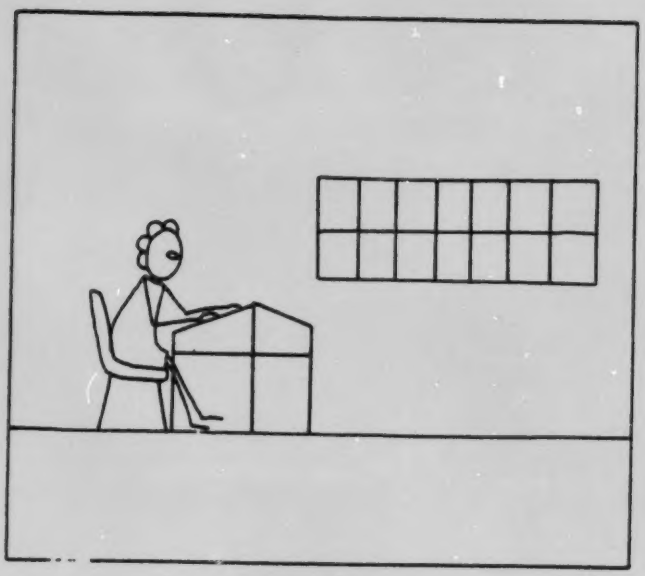


THE TEACHER IS TALKING TO THE CLASS.

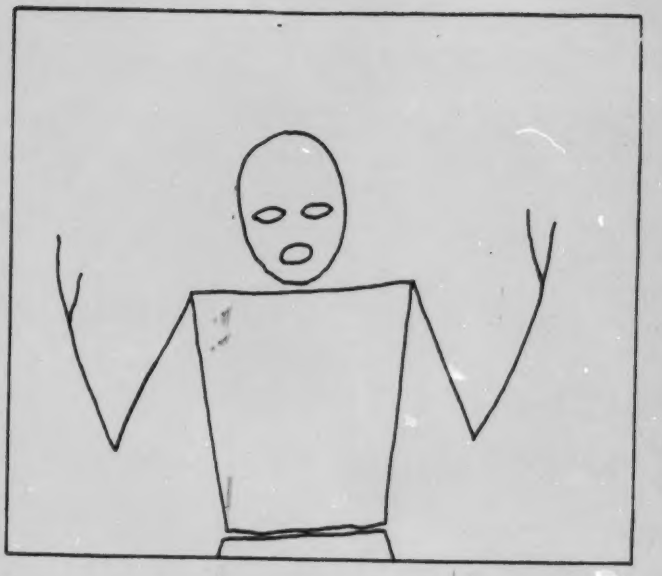
THE TEACHER SAYS, "WE WILL HAVE FUN TODAY AND WORK HARD TOO."



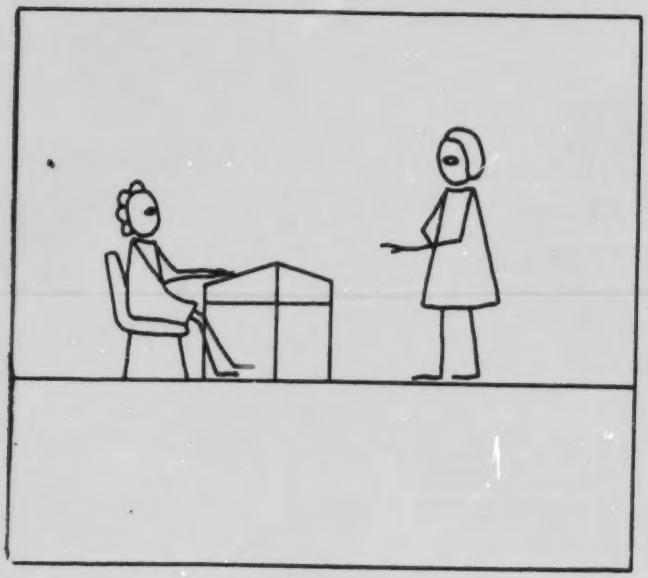
WHICH FACE IS MARY'S?



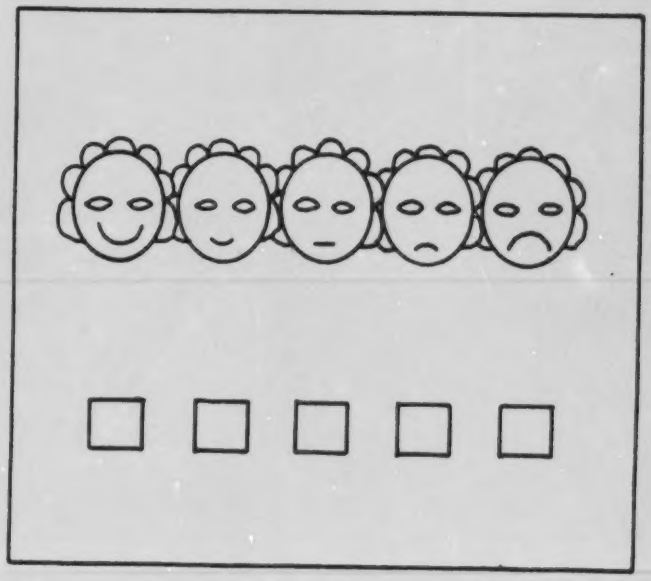
JULIE IS IN _____
CLASSROOM.



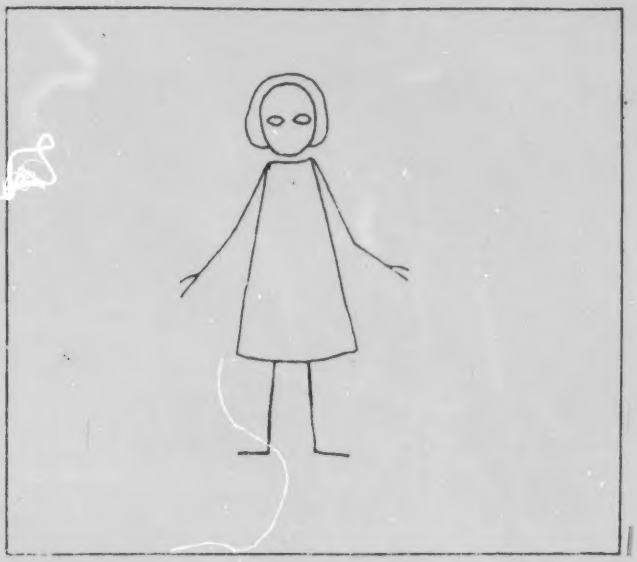
EACH CHILD IS TELLING ABOUT
SOMETHING HE DID.



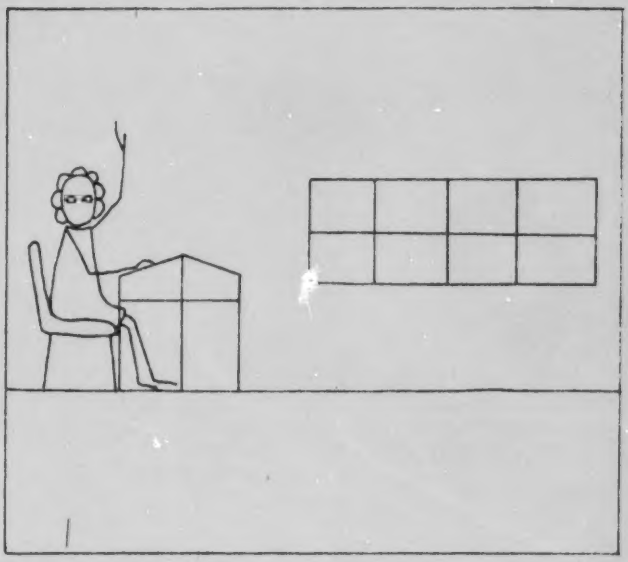
THE TEACHER CALLS ON JULIE.



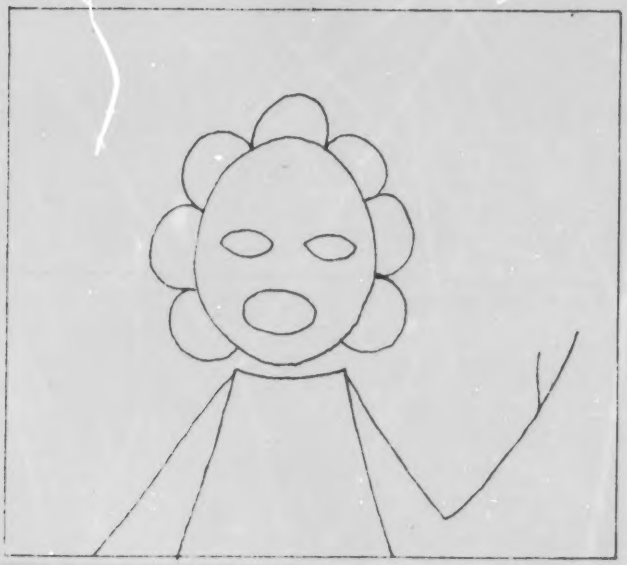
WHICH ONE IS JULIE'S FACE?



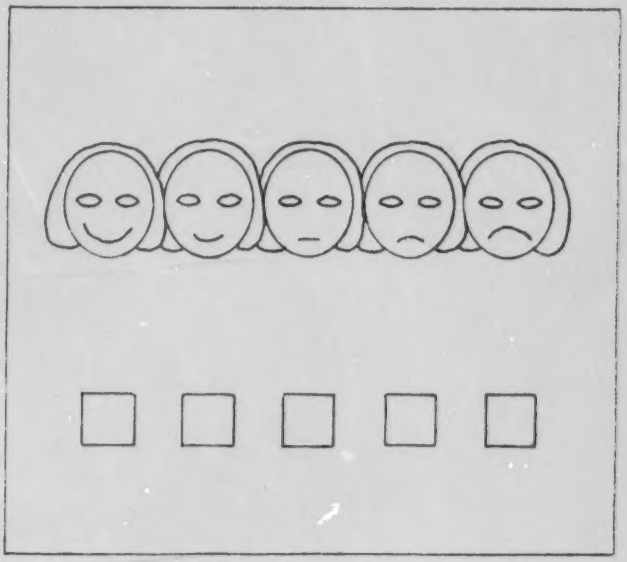
_____ SAYS, "CLASS, LET'S PUT OUR CHAIRS TOGETHER IN A CIRCLE.



KATHY RAISES HER HAND.

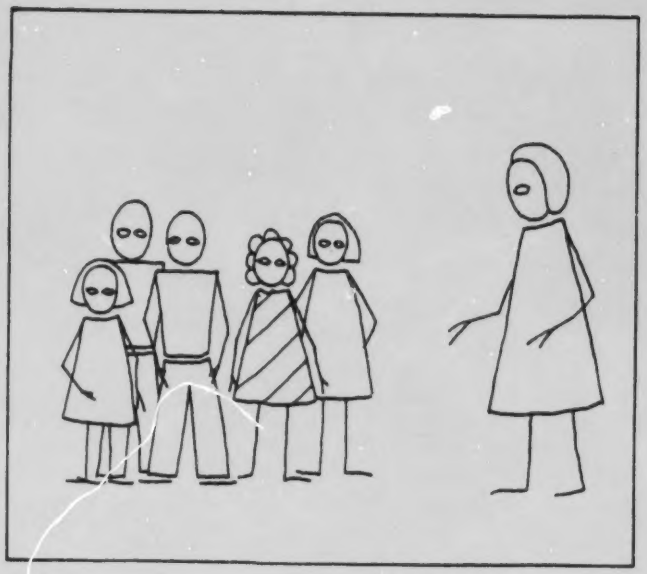


KATHY ASKS TO SIT NEXT TO _____

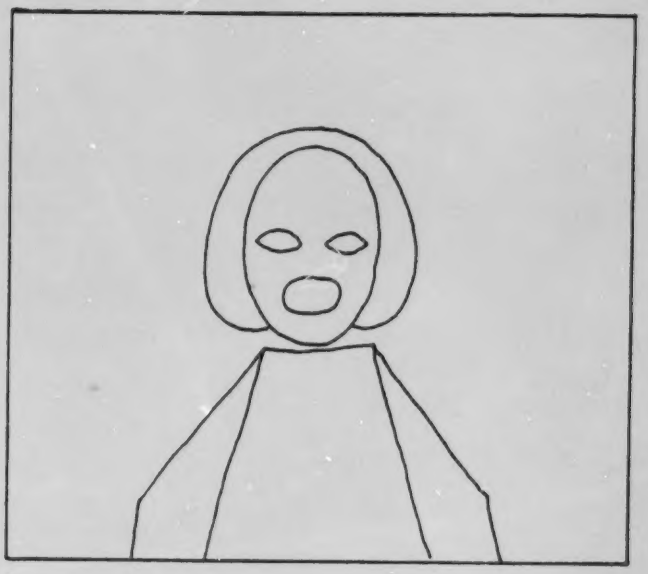


WHICH ONE IS THE TEACHER'S FACE?

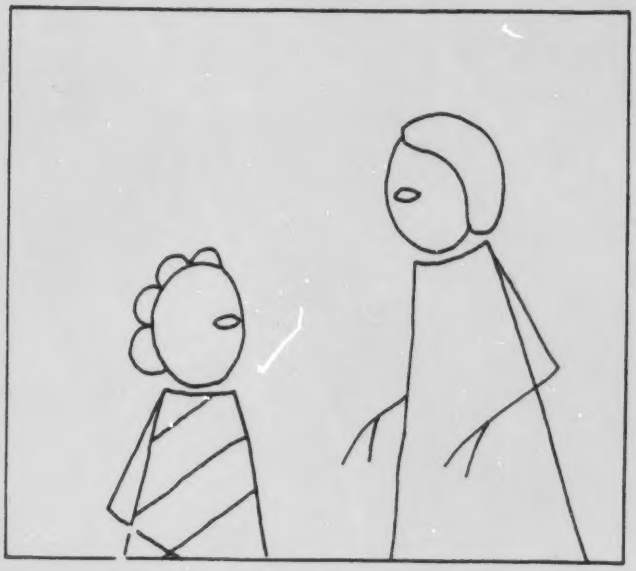
C-8



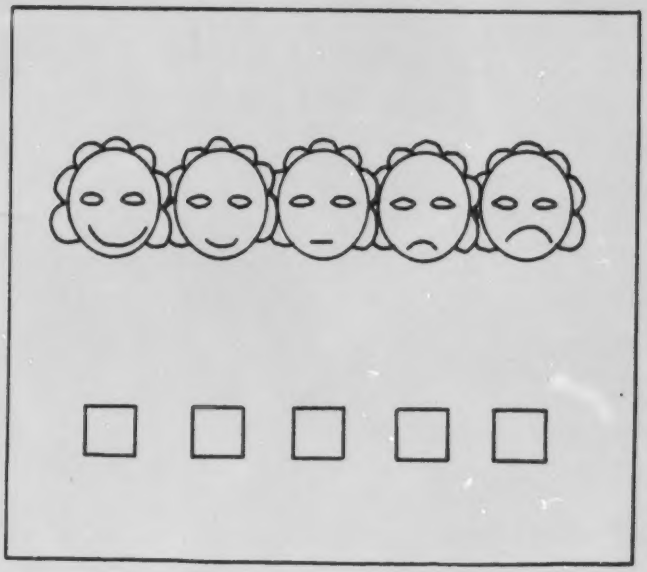
_____ SAYS, "MY CLASSROOM WILL BE OPEN ON SATURDAY. YOU CAN COME TO READ, PLAY GAMES, OR TO MAKE THINGS."



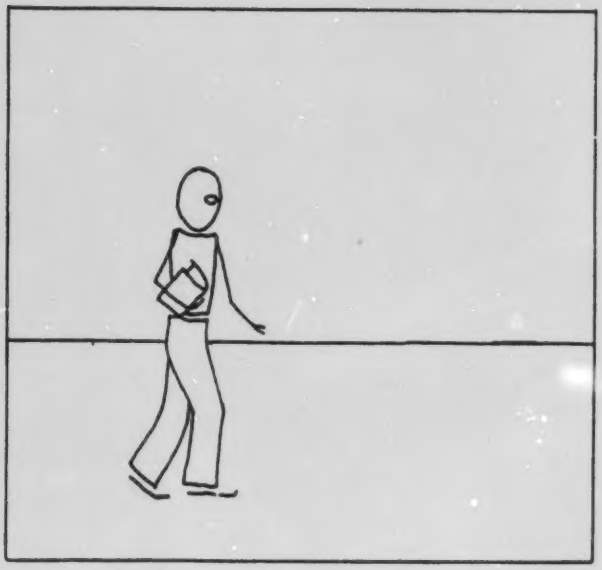
_____ SAYS, "DO YOU WANT TO COME?"



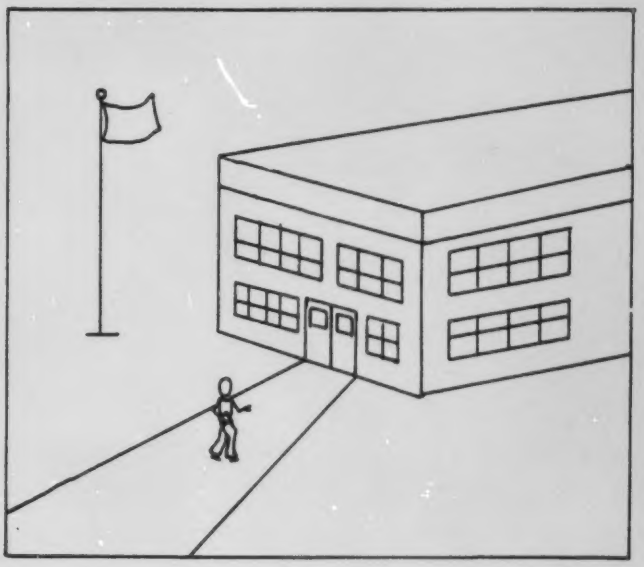
SHE LOOKS AT JANE.



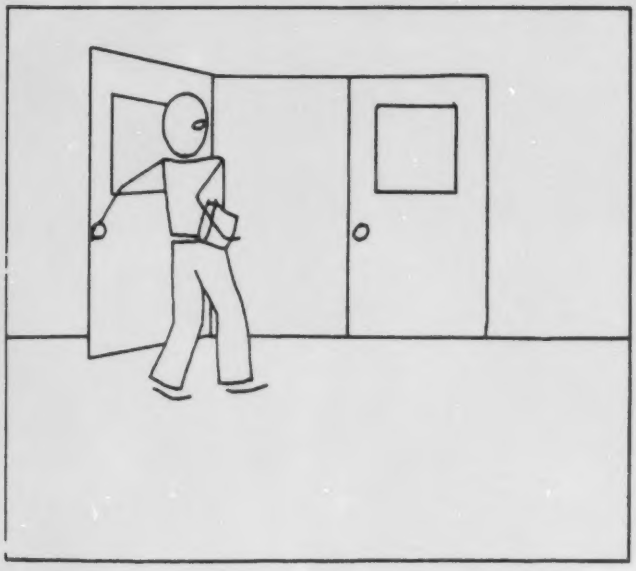
WHICH ONE IS JAN'S FACE?



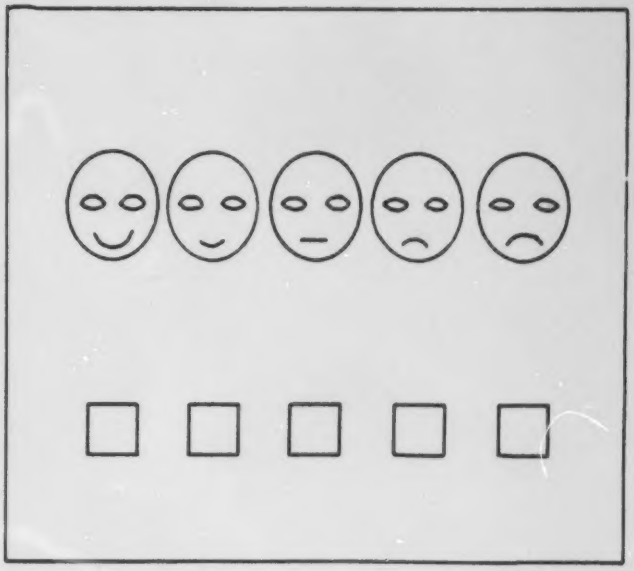
BOBBY IS ON HIS WAY TO SCHOOL.



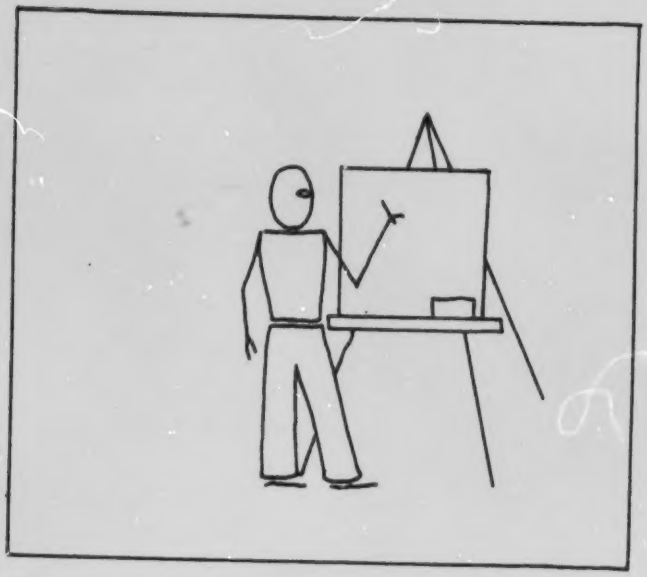
HE GETS TO SCHOOL.



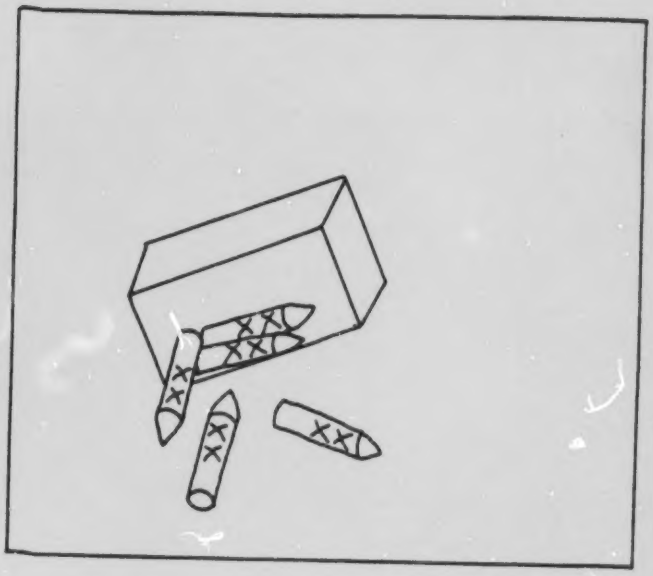
HE OPENS THE DOOR TO ——————
CLASSROOM AND GOES INSIDE.



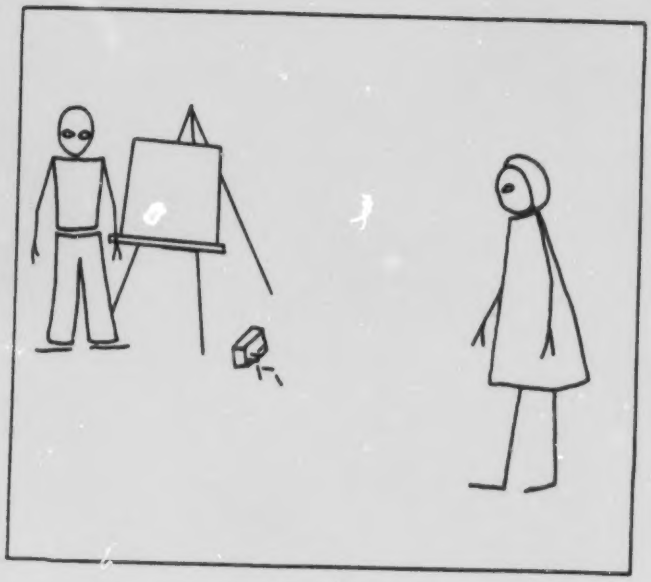
WHICH ONE IS BOBBY'S FACE?



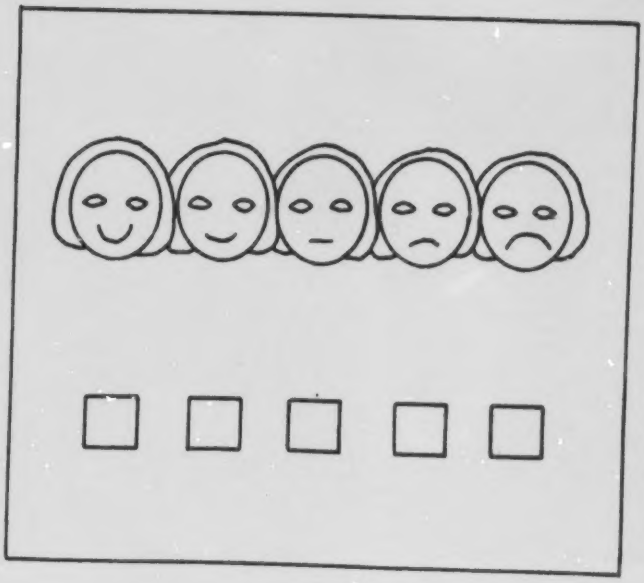
RAY IS DRAWING IN _____ CLASSROOM.



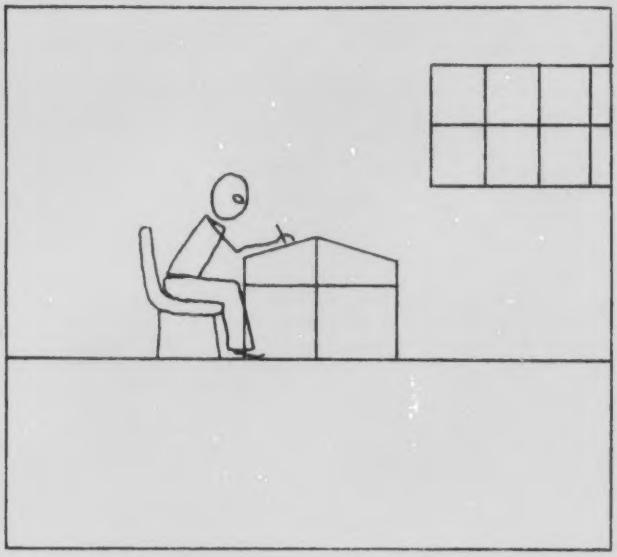
HE SPILLS HIS CRAYONS ON THE FLOOR.



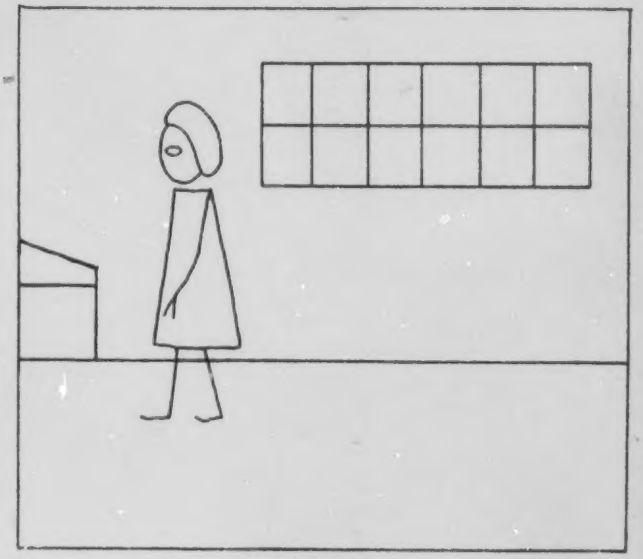
HE SEES THE TEACHER COMING OVER.



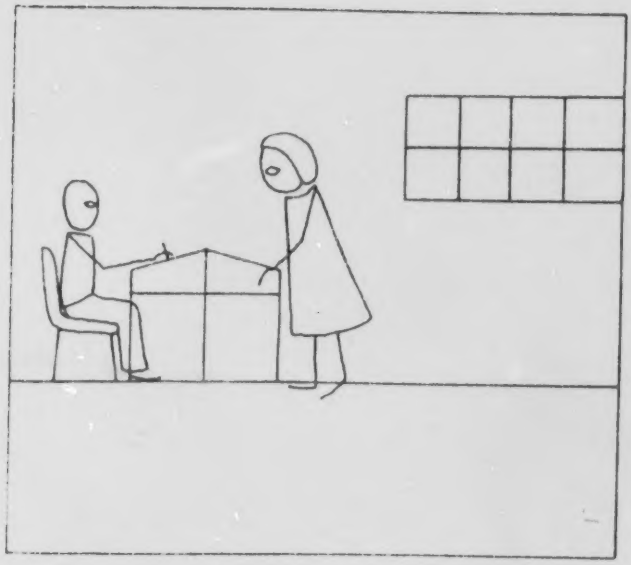
WHICH ONE IS THE TEACHER'S FACE?



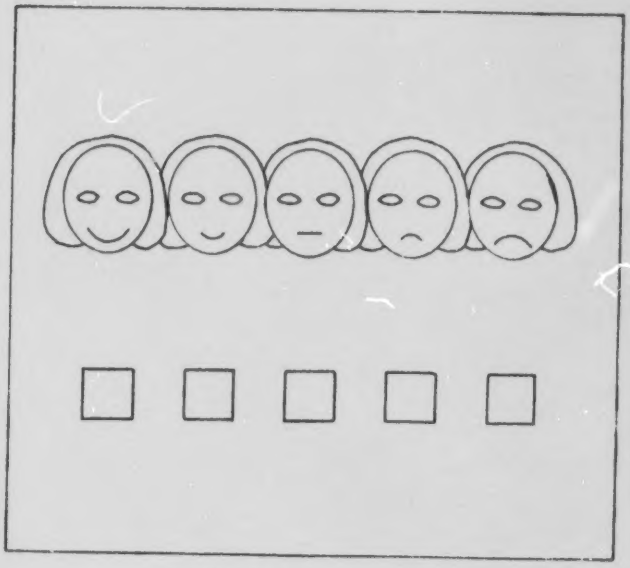
JEFF IS WORKING IN _____ CLASSROOM.



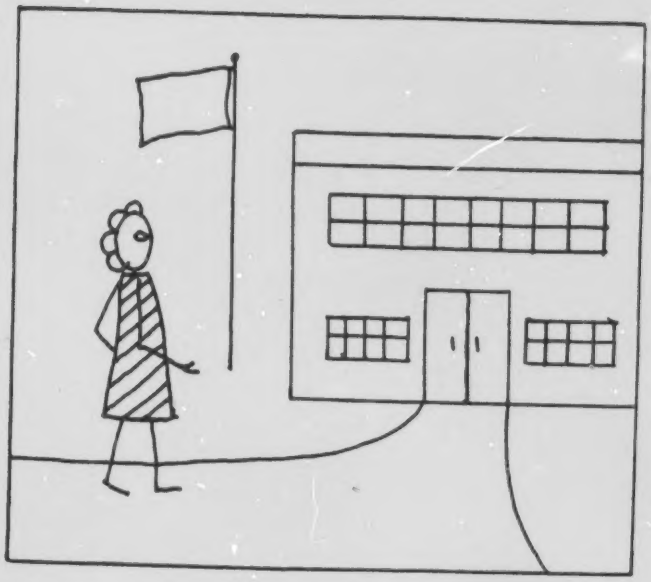
THE TEACHER IS WALKING AROUND THE ROOM.



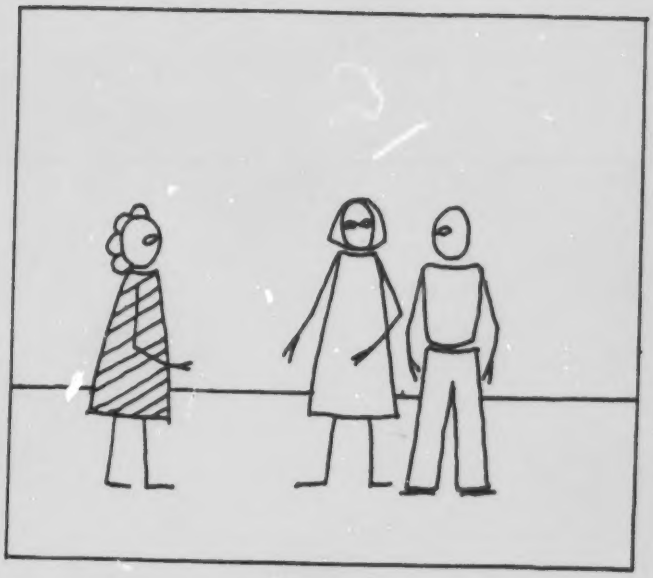
SHE STOPS AT JEFF'S DESK.



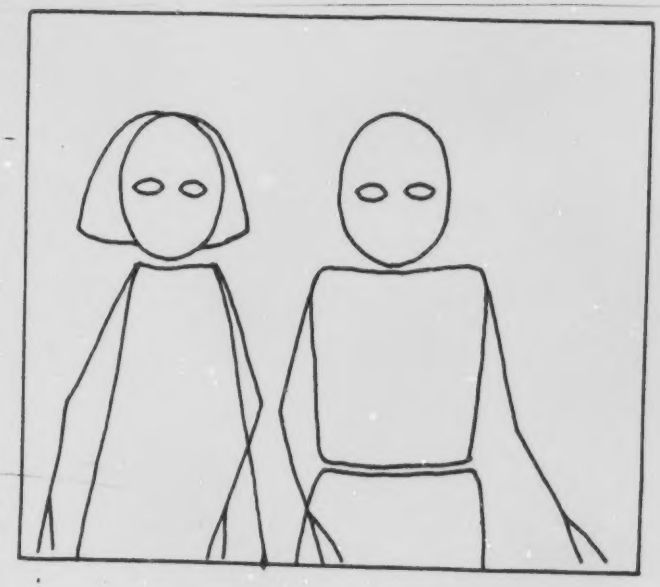
WHICH ONE IS THE TEACHER'S FACE?



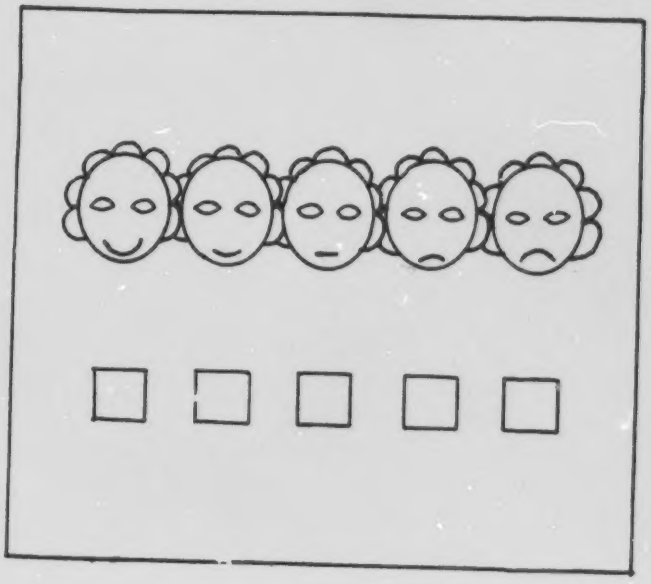
JANET IS COMING UP THE WALK TOWARD SCHOOL.



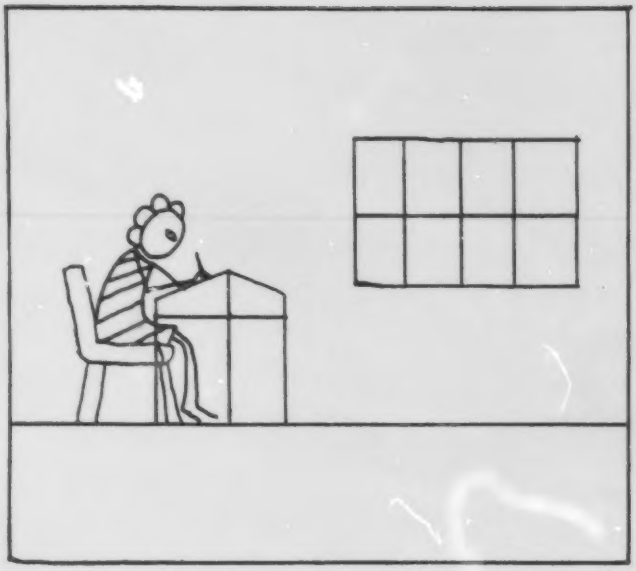
SHE SEES SOME CHILDREN IN HER CLASS.



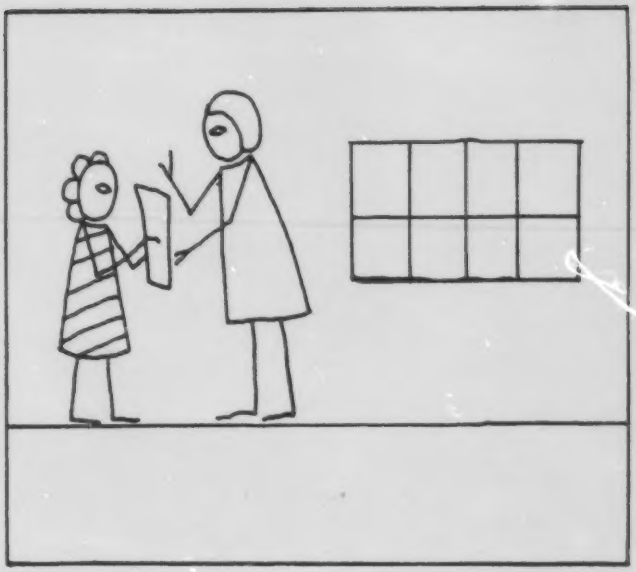
JANET SEETS THEM LOOKING AT HER.



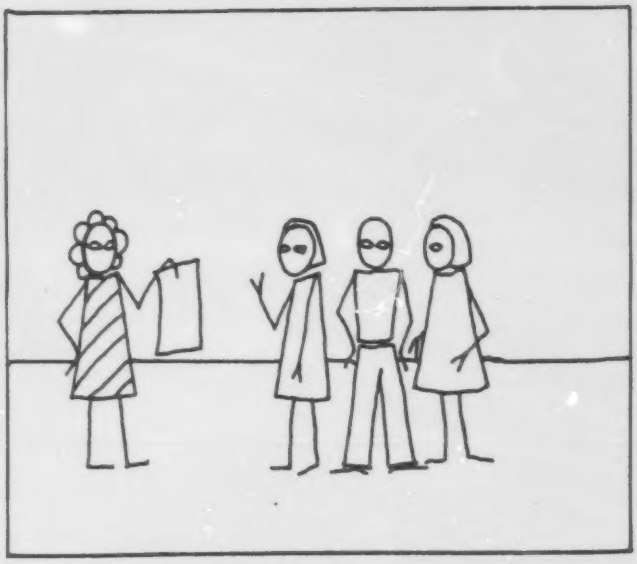
WHICH ONE IS JANET'S FACE?



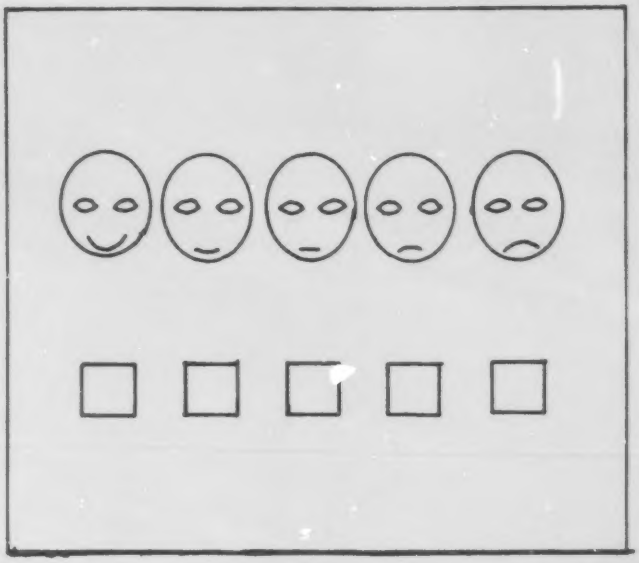
ALICE HAS MADE A PICTURE AT SCHOOL.



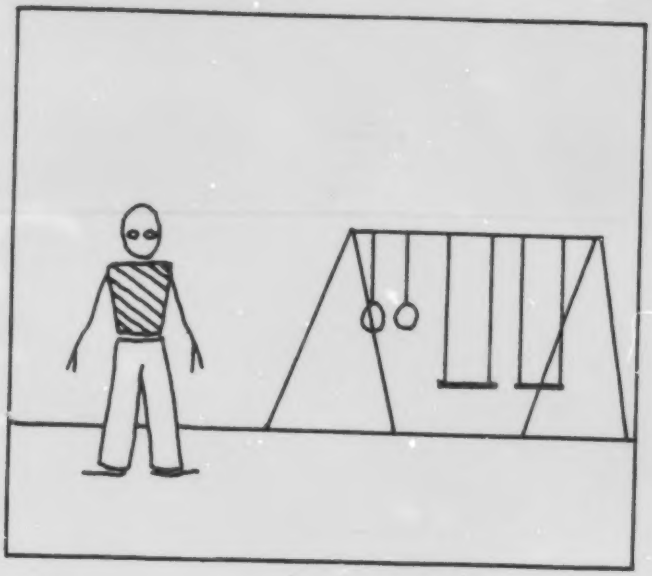
THE TEACHER TELLS ALICE IT IS A GOOD PICTURE.



ALICE SHOWS IT TO THE OTHER CHILDREN AFTER SCHOOL.

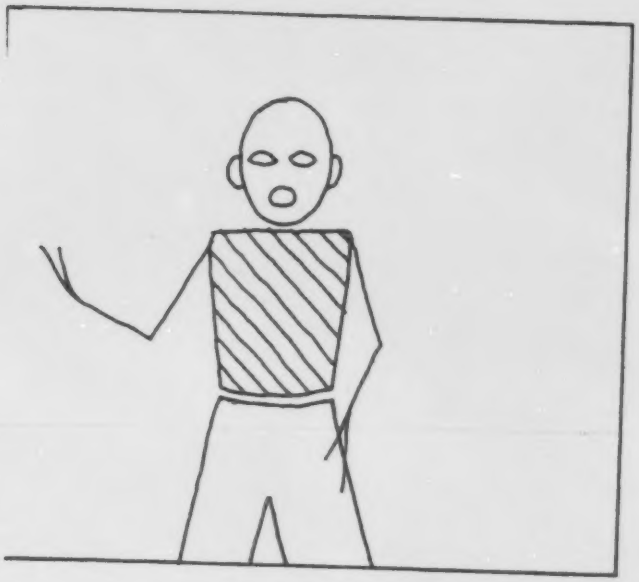


HOW DO THEIR FACES LOOK?

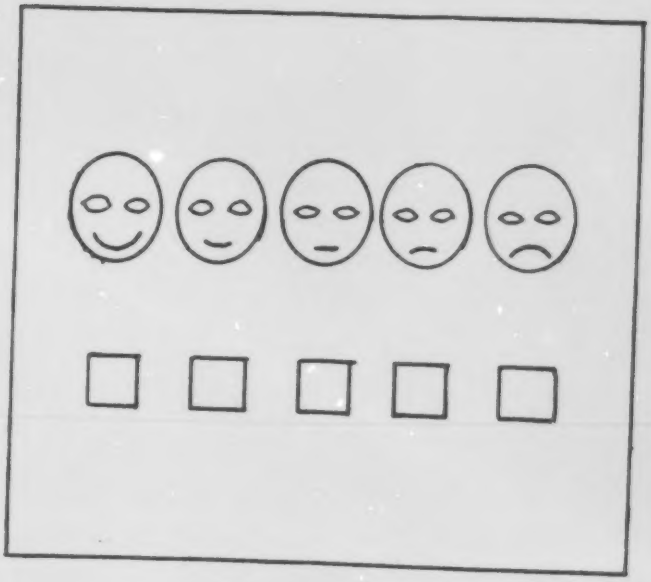


JOHN IS ON THE PLAYGROUND.

HE SEES A GROUP OF CHILDREN PLAYING A GAME.

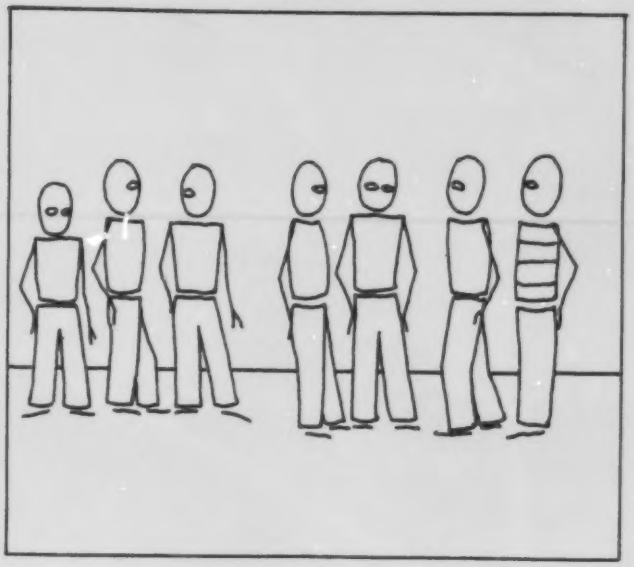


JOHN ASKS THE BOYS IF HE CAN PLAY WITH THEM.

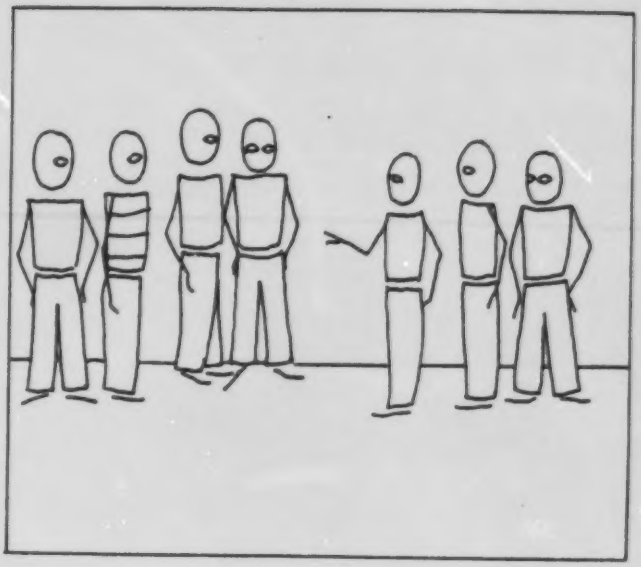


HOW DO THE BOYS LOOK?

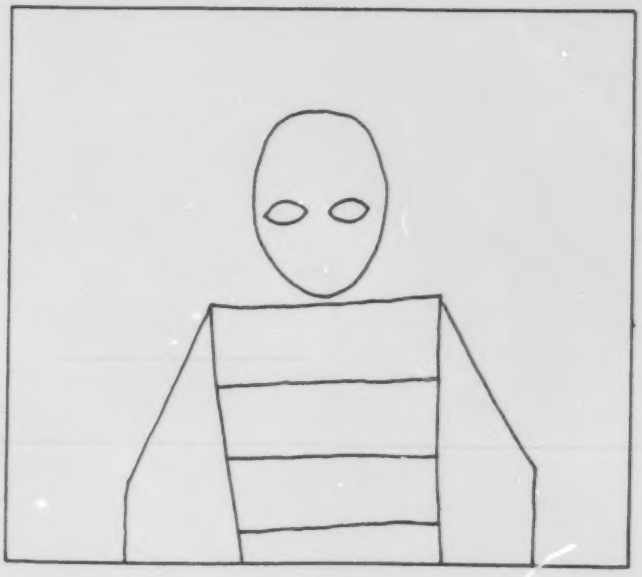
C-15



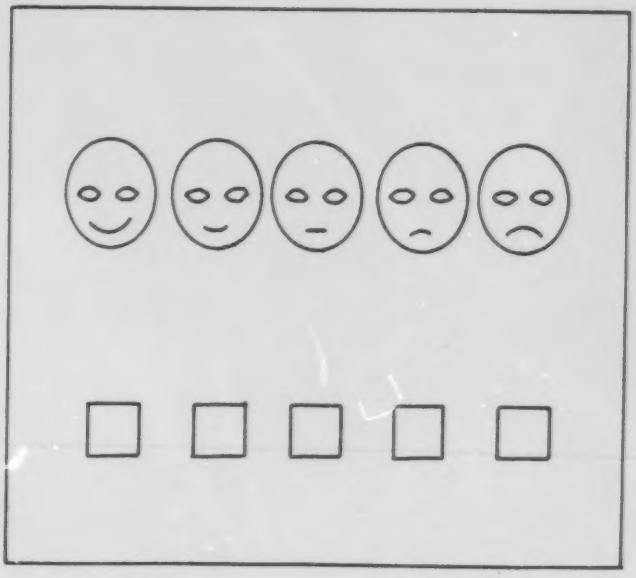
SOME BOYS BEGIN TO PLAY A GAME.



THEY ARE CHOOSING SIDES.



TIM HAS NOT BEEN CHOSEN YET.



WHICH ONE IS TIM'S FACE?

C-16

Student Name _____

INTERVIEW QUESTIONS

What do you do at recess? (Probe for which students this student spends his or her time.) _____

_____

_____

_____

Who do you eat lunch with? _____

_____

_____

_____

What do you do at lunch time? (Again, probe for which students this student spends his or her time?) _____

_____

_____

_____

When you are at school, what is your favorite time of day? _____

_____

(Probe for classroom activities, interviewer will need to know the subject that is being taught when the handicapped child is in the regular classroom.) _____

_____

_____

What time do you like least? _____

_____

SRI International

MAINSTREAMING STUDY

TEACHER QUESTIONNAIRE

Teacher Name

School

School District

Return to:

Margaret Needels
SRI International
333 Ravenswood Avenue
Menlo Park, CA 94025

TEACHER QUESTIONNAIRE

This questionnaire is part of SRI's study of the mainstreaming process for students who are enrolled in special day classes. To gather information, we have been observing in your classroom and also ask that you complete this questionnaire. All responses will be held in strict confidence. No names of school districts, schools, teachers or students will be reported.

Upon receipt of your completed questionnaire, we will be pleased to provide you with a $15 honorarium. Please provide the information for the honorarium payment and return your completed questionnaire in the enclosed envelope.

If you have any questions, call Margaret Needels at SRI (859-3603).

For Honorarium Payment:

Name _____ / _____
First Last

Home Address _____

_____

Social Security No. _____

I BACKGROUND AND EXPERIENCE

Please answer the following questions regarding your educational background and professional experience.

1.1 What is the highest degree you hold? (check one)

Bachelor's degree 1
Master's degree 2
Doctoral degree 3
Other _____ 4
(please specify)

1.2 Which credential(s) do you hold? (check all that apply)

Elementary 1
Secondary 2
Counselling 3
Learning handicapped 4
Severely handicapped 5
Administrative 6
Other _____ 7
(please specify)

		Number of Years (including this year)
1.3	How many years have you been teaching full-time?	_____
1.4	How many years have you been teaching in this district full-time?	_____
1.5	How many years have you been teaching at this school full-time?	_____
1.6	How many years have you been teaching the grade level(s) that you are teaching this year?	_____
1.7	What is your class size this year? . . _____ (number of regular students)	

II SPECIAL EDUCATION STUDENTS

2.1 Including this year, how many years have you mainstreamed students into your class from a special day class? _____
(number of years)

2.2 During this school year, how many students are enrolled in your class and pulled out on a regular basis to receive special education instruction? _____
(number of students)

2.3 During this school year, how many students who are enrolled in a special day class are mainstreamed into your class for a few hours a week? _____
(number of students

2.4 Please indicate the extent to which you have needed to modify your regular classroom procedures to accommodate the special day class students in your classroom this school year (circle one answer for each item).

Modifications	None	A Little	Some	Quite a Bit	Completely Modified
a. Physical classroom arrangement	1	2	3	4	5
b. Instructional grouping	1	2	3	4	5
c. Use of aides or student tutors	1	2	3	4	5
d. Use of different materials	1	2	3	4	5
e. Modifying the regular curriculum	1	2	3	4	5
f. Scheduling activities and/or lessons	1	2	3	4	5
g. Behavior management strategies	1	2	3	4	5
h. Other: _____	1	2	3	4	5

_____

_____

_____

2.5 When special day class students are placed in regular classrooms for at least part of the day, what effects do you think this placement has on most of the regular education students in the classroom in terms of the following: (circle one answer for each item)

	Very Negative Effect	Somewhat Negative Effect	No Effect	Somewhat Positive Effect	Very Positive Effect
a. What effect does placement in a regular classroom have on the regular education students in terms of their educational experiences?	1	2	3	4	5
b. What effect does it have on the regular education students in terms of their social experiences?	1	2	3	4	5
c. What effect does it have on the regular education students in terms of their attitudes toward special education students?	1	2	3	4	5

PLEASE ANSWER QUESTIONS 2.6 and 2.7 SEPARATELY FOR EACH SPECIAL DAY CLASS STUDENT IN YOUR CLASS WHOM WE HAVE BEEN OBSERVING. WE HAVE PROVIDED THREE SETS OF THESE QUESTIONS: USE ONE SET FOR EACH SPECIAL DAY CLASS STUDENT.

STUDENT 1: _____

2.6 What effect does placement in the regular classroom have on the special education student? (Circle one answer for each item.)

	Very Negative Effect	Somewhat Negative Effect	No Effect	Somewhat Positive Effect	Very Positive Effect
a. What effect does placement in the regular classroom have on the special education student in terms of his or her educational experiences?	1	2	3	4	5
b. What effect does placement in the regular classroom have on the special education student in terms of his or her social experiences?	1	2	3	4	5

2.7 What changes in the student's attitude have you observed during this school year? (Circle one answer for each item.)

	Became Much More Negative	Became Somewhat More Negative	No Change	Became Somewhat More Positive	Became Much More Positive
a. Attitude toward school	1	2	3	4	5
b. Attitude toward special education program and services	1	2	3	4	5
c. Attitude toward the regular education students	1	2	3	4	5
d. Attitude toward his or her self	1	2	3	4	5
e. Attitude toward you as teacher	1	2	3	4	5

PLEASE ANSWER QUESTIONS 2.6 and 2.7 SEPARATELY FOR EACH SPECIAL DAY CLASS STUDENT IN YOUR CLASS WHOM WE HAVE BEEN OBSERVING. WE HAVE PROVIDED THREE SETS OF THESE QUESTIONS: USE ONE SET FOR EACH SPECIAL DAY CLASS STUDENT.

STUDENT 2: _____

2.6 What effect does placement in the regular classroom have on the special education student? (Circle one answer for each item.)

	Very Negative Effect	Somewhat Negative Effect	No Effect	Somewhat Positive Effect	Very Positive Effect
a. What effect does placement in the regular classroom have on the special education student in terms of his or her educational experiences?	1	2	3	4	5
b. What effect does placement in the regular classroom have on the special education student in terms of his or her social experiences?	1	2	3	4	5

2.7 What changes in the student's attitude have you observed during this school year? (Circle one answer for each item.)

	Became Much More Negative	Became Somewhat More Negative	No Change	Became Somewhat More Positive	Became Much More Positive
a. Attitude toward school	1	2	3	4	5
b. Attitude toward special education program and services	1	2	3	4	5
c. Attitude toward the regular education students	1	2	3	4	5
d. Attitude toward his or her self	1	2	3	4	5
e. Attitude toward you as teacher	1	2	3	4	5

PLEASE ANSWER QUESTIONS 2.6 and 2.7 SEPARATELY FOR EACH SPECIAL DAY CLASS STUDENT IN YOUR CLASS WHOM WE HAVE BEEN OBSERVING. WE HAVE PROVIDED THREE SETS OF THESE QUESTIONS: USE ONE SET FOR EACH SPECIAL DAY CLASS STUDENT.

STUDENT 3: _____

2.6 What effect does placement in the regular classroom have on the special education student? (Circle one answer for each item.)

	Very Negative Effect	Somewhat Negative Effect	No Effect	Somewhat Positive Effect	Very Positive Effect
a. What effect does placement in the regular classroom have on the special education student in terms of his or her <u>educational</u> experiences?	1	2	3	4	5
b. What effect does placement in the regular classroom have on the special education student in terms of his or her <u>social</u> experiences?	1	2	3	4	5

2.7 What changes in the student's attitude have you observed during this school year? (Circle one answer for each item.)

	Became Much More Negative	Became Somewhat More Negative	No Change	Became Somewhat More Positive	Became Much More Positive
a. Attitude toward school	1	2	3	4	5
b. Attitude toward special education program and services	1	2	3	4	5
c. Attitude toward the regular education students	1	2	3	4	5
d. Attitude toward his or her self	1	2	3	4	5
e. Attitude toward you as teacher	1	2	3	4	5

2.8 In your opinion, was one or more of the special day class students in your classroom this year inappropriately placed? (check one)

Yes ____1 (If "yes", please answer Question 2.9)

No ____2 (If "no", skip to Question 3.1)

2.9 a. Of the _____ special day class students in my classroom,
(total number)

_____ were inappropriately placed.
(number)

b. Why do you feel each of the students were inappropriately placed? (Check all that apply for each student whom you feel was inappropriately placed.)

	Student 1	Student 2	Student 3
The student(s) needed more help than I could give	_____ 1	_____ 1	_____ 1
The student(s) could have benefited more socially from a different placement	_____ 2	_____ 2	_____ 2
The student(s) could have benefited more educationally from a different placement	_____ 3	_____ 3	_____ 3
The student(s) could have benefited more both educationally and socially from a different placement	_____ 4	_____ 4	_____ 4
Other _____ (please specify) _____	_____ 5	_____ 5	_____ 5

2.10 Indicate the importance of the following educational and social skills to a day class student's mainstreaming success. (Circle one answer for each item.)

	Not Important	Slightly Important	Important	Very Important	Altogether Essential
a. Ability to focus on immediate classroom tasks	1	2	3	4	5
b. Ability to follow directions	1	2	3	4	5
c. Ability to organize materials and remain on-task during seatwork	1	2	3	4	5
d. Ability to refrain from negative behaviors	1	2	3	4	5
e. Ability to work at a co-operative task with other students	1	2	3	4	5
f. Ability to refrain from excessive socializing during academic work	1	2	3	4	5
g. Ability to participate in oral classroom discussions	1	2	3	4	5
h. Ability to ask for assistance appropriately	1	2	3	4	5

i. Ability to read at classroom grade level	1	2	3	4	5
j. Ability to perform arithmetic tasks at grade level	1	2	3	4	5
k. Ability to write (print or cursive) with minimal assistance	1	3	3	4	5
l. Ability to work without major teacher supervision	1	2	3	4	5
m. Acceptance from regular education students	1	2	3	4	5

III THE SPECIAL EDUCATION PROGRAM

In this section, we would like you to indicate your familiarity with the various aspects of the special education program in your district. (Circle one answer for each item.)

3.1 How familiar are you with the following laws and criteria?

	Not at All Familiar	Vaguely Familiar	Somewhat Familiar	Familiar	Very Familiar
a. Public Law 94-142	1	2	3	4	5
b. The California State Master Plan for Special Education	1	2	3	4	5
c. Your District's criteria for identification and placement	1	2	3	4	5

3.2 How familiar are you with the following procedures for identifying, assessing, and placing students in special education in your district?

	Not at All Familiar	Vaguely Familiar	Somewhat Familiar	Familiar	Very Familiar
a. Individual Educational Program(IEP)	1	2	3	4	5
b. Due Process procedures (parents' rights)	1	2	3	4	5
c. Referral procedures	1	2	3	4	5
d. Assessment procedures	1	2	3	4	5
e. Screening procedures	1	2	3	4	5
f. Placement procedures	1	2	3	4	5

IV IN-SERVICE TRAINING

4.1 Within the last four years, have you had the opportunity to be involved in any formal in-service training that addressed special education issues?

Yes_____ (If "yes", answer Questions 4.2 through 4.6)

No _____ (If "no", skip to Question 5.1)

4.2 Approximately how many hours of workshops (or mini-courses, etc.) have you attended? _____(total number of hours)

4.3 Approximately how many formal college courses (extending over a semester or quarter) have you completed in special education training?

_____(number of courses)

4.4 Indicate the approximate percentage of your in-service training that was provided by each of the following: (Please make the total equal 100%.)

a. School. . . . . ._____%
b. District. . . . . ._____%
c. County. . . . . ._____%
d. College (regular curriculum). . . . . ._____%
e. College extension courses . . . . . ._____%
f. Other_____ . . . . . ._____%
(please specify)

Total_____%

V SPECIAL EDUCATION TEACHING SKILLS

5.1 How skilled would you say you are in the following areas: (Circle one answer for each item.)

	Skilled	Minimally Skilled	Somewhat Skilled	Above Average	Very Skilled
a. Screening students for special education	1	2	3	4	5
b. Referring students for assessment for special education	1	2	3	4	5
c. Procedures for assessing the educational needs of special education students	1	2	3	4	5
d. Procedures for assessing the social needs of special education students	1	2	3	4	5
e. Using observations for assessing the needs of special education students	1	2	3	4	5
f. Developing Individual Education Programs (IEPs) for special education students	1	2	3	4	5
g. Using IEPs for instructional purposes	1	2	3	4	5
h. Instructing special education students in academic areas	1	2	3	4	5
i. Socially integrating special education students into the regular classroom	1	2	3	4	5
j. Coordinating resources and services for special education students	1	2	3	4	5
k. Working with other educational personnel in providing services to special education students	1	2	3	4	5

VI COMMUNICATION

6.1 Do you attend formal, regularly scheduled meetings with the special education staff?

Yes _____ (If "yes", answer Question 6.2 and 6.3)

No _____ (If "no", skip to Question 6.4)

6.2 How often are these meetings scheduled?

Less than once a Month	Once a Month	2-3 times per Month	Once a Week	More than once a Week
1	2	3	4	5

6.3 Who attends these meetings? (Check all that apply.)

Parents. . . . . _____ 1

Regular Education Teachers . . . . . _____ 2

Special Education Teachers . . . . . _____ 3

Principal. . . . . _____ 4

District Special Education Staff Member. . . . . _____ 5

Other_____ . . . . . _____ 6
(please specify)

6.4 Do you have access to the special day student's IEP?

Yes _____ (If "yes", answer Question 6.5)

No _____ (If "no", skip to Question 6.7)

6.5 Do you refer to the student's IEP?

Yes _____ (If "yes", answer Question 6.6)

No _____ (If "no", skip to Question 6.7)

6.6 When you refer to the IEP, how helpful is it in assisting you in mainstreaming activities? (Circle one.)

Not Helpful	Slightly Helpful	Somewhat Helpful	Quite Helpful	Extremely Helpful
1	2	3	4	5

6.7 How often do you and the special education staff talk informally (e.g. other than regular, formal meetings) about the mainstreaming process? (Circle one.)

About Once a month	2-3 Times a month	About Once a week	2-5 Times a week	Every day
1	2	3	4	5

6.8 On the average, how often do you talk with the special education staff about mainstreamed students' instructional needs? (Circle one.)

About Once a month	2-3 Times a month	About Once a week	2-5 Times a week	Every day
1	2	3	4	5

6.9 On the average, how often do you talk with the special education staff about mainstreamed students' social needs? (Circle one.)

About Once a month	2-3 Times a month	About Once a week	2-5 Times a week	Every day
1	2	3	4	5

6.10 How available (when needed) is the special education staff to assist the regular teaching staff in mainstreaming activities? (Circle one.)

Almost Never Available	Seldom Available	Often	Usually Available	Always Available
1	2	3	4	5

6.11 When you talk with the special education staff, how helpful are they in assisting you in mainstreaming activities? (Circle one.)

Not Helpful	Slightly Helpful	Somewhat Helpful	Quite Helpful	Extremely Helpful
1	2	3	4	5

6.12 In general, what do you think is the quality of the communication (i.e., do they talk together/exchange information) between the following pairs of role groups? (Circle one answer for each item.)

	Poor	Fair	Good	Excellent	Have No Idea
a. Communication between district special education staff and the special education teachers in your school	1	2	3	4	5
b. Communication between district special education office and your school principal	1	2	3	4	5
c. Communication between district special education staff and the regular teachers in your school	1	2	3	4	5
d. Communication between your school principal and the special education teacher in your school	1	2	3	4	5
e. Communication between school principal and the regular teachers	1	2	3	4	5
f. Communication between the special education teacher and the regular teachers in your school	1	2	3	4	5

6.13 In general, what do you think is the quality of the collaboration (defined as working together) between the following pairs of role groups? (Circle one answer for each item.)

	Poor	Fair	Good	Excellent	Have No Idea
a. Collaboration between district special education office and the special education teacher in your school	1	2	3	4	5
b. Collaboration between special education office and your school principal	1	2	3	4	5
c. Collaboration between district special education office and the regular teachers in your school	1	2	3	4	5
d. Collaboration between your school principal and the special education teacher in your school	1	2	3	4	5
e. Collaboration between the special education teacher and the regular teachers in your school	1	2	3	4	5

APPENDIX D

Observer Accuracy and Interrater Agreement

PERCENT AGREEMENT WITH CRITERION CODING

Codes		Frequency of Code, Criterion Coding	Individual Observers							All Observers	
			Obs. 1	Obs. 2	Obs. 3	Obs. 4	Obs. 5	Obs. 6	Obs. 7	$\bar{x}$	S.D.
Who:	T	51	100	100	100	100	100	98	100	99.7	.75
	F	16	100	100	100	100	100	100	100	100	0
	M	30	100	100	100	100	100	100	100	100	0
	E	2	100	100	100	100	100	100	100	100	0
To Whom:	T	50	100	100	100	100	100	96	100	99.4	1.51
	F	25	100	100	100	100	100	100	100	100	0
	M	13	100	100	100	100	100	100	100	100	0
	E	11	100	100	100	100	100	100	100	100	0
What:	1,1Q	22	100	100	77	77	82	100	82	88.3	11.15
	2	4	50	50	100	100	100	75	83	82.1	23.78
	3	24	92	100	100	100	100	87	83	94.6	7.25
	4	10	80	100	100	100	80	80	90	90.0	10.00
	5		CODE NOT USED IN OBSERVATIONS								
	6	3	67	100	0	100	100	100	100	81.0	37.77
	7	12	92	83	100	75	100	100	92	91.7	9.67
	8		CODE NOT USED IN OBSERVATIONS								
	9	9	100	44	22	67	67	100	78	68.3	28.41
	10	1	100	100	100	100	100	100	100	100	0
	11	1	100	100	100	100	100	100	100	100	0
	12	14	100	93	100	100	100	100	100	99.0	2.64
	x	2	50	100	0	100	100	100	100	78.6	39.34
How:	T		CODE NOT USED IN OBSERVATIONS								
	R/M	73	97	97	100	100	100	100	97	98.7	1.60
	B	10	100	100	100	100	100	100	100	100	0
	C	2	100	100	100	100	100	100	100	100	0
	G	6	50	0	50	0	50	83	83	45.1	34.19
	O	14	93	100	78	100	100	100	93	84.9	33.16
	L	12	92	83	92	100	75	83	92	88.1	8.28
	W	2	100	100	100	100	100	100	100	100	0
	S	7	85	100	85	85	100	71	85	87.3	10.08
	N	4	100	50	100	100	100	100	100	100	0
	D	33	97	100	100	100	100	100	97	99.1	1.46
	P	1	100	100	100	100	100	100	100	100	0
	I		CODE NOT USED IN OBSERVATIONS								
	T		CODE NOT USED IN OBSERVATIONS								
	NV	6	100	83	33	100	33	0	33	54.6	39.39
Agreement		$\bar{x}$	91.7	89.3	84.3	93.53	93.12	93.48	93.0	88.72	
		S.D.	16.40	24.00	31.72	20.25	16.29	18.88	14.07	20.35	

PERCENTAGE OF FRAMES IN WHICH EACH CODE WAS RECORDED
(Posttraining Testing)

Codes		Trainer	Individual Observers							Range for All Observers
			Obs. 1	Obs. 2	Obs. 3	Obs. 4	Obs. 5	Obs. 6	Obs. 7	
Who:	T	.57	.55	.54	.59	.53	.56	.57	.55	.53 - .56
	F	.24	.21	.28	.25	.24	.25	.24	.22	.21 - .28
	M	.17	.18	.14	.12	.18	.12	.15	.17	.12 - .18
	E	.02	.06	.04	.04	.04	.07	.04	.06	.02 - .07
Whom:	T	.48	.51	.46	.48	.53	.45	.45	.46	.45 - .51
	F	.42	.41	.44	.42	.39	.43	.45	.42	.39 - .45
	M	.07	.05	.07	.07	.05	.08	.05	.07	.05 - .08
	E	.03	.03	.03	.03	.03	.03	.05	.05	.03 - .05
What:	1.1Q	.29	.26	.26	.28	.30	.30	.30	.29	.26 - .30
	2	0	0	0	0	0	0	0	0	0 - 0
	3	.27	.27	.30	.28	.29	.27	.29	.29	.27 - .30
	4	.17	.17	.17	.17	.17	.15	.16	.16	.15 - .17
	5		CODE NOT USED IN OBSERVATIONS							
	6	.04	.06	.03	.04	.04	.05	.03	.05	.03 - .06
	7	.11	.10	.12	.09	.10	.10	.11	.11	.09 - .12
	8		CODE NOT USED IN OBSERVATIONS							
	9	.07	.05	.06	.07	.05	.05	.07	.06	.05 - .07
	10	.02	.04	0	.03	.02	.01	.01	.03	0 - .04
	11	0	0	0	.01	0	0	.01	0	0 - .01
	12	0	0	0	0	0	.03	0	.01	0 - .03
	x	.02	0	.03	0	.01	0	0	0	0 - .03
How:	T		CODE NOT USED IN OBSERVATIONS							
	R/M	.90	.90	.93	.91	.90	.91	.89	.92	.89 - .93
	B	0	0	0	0	0	0	0	0	0 - 0
	C	0	0	0	0	0	0	0	0	0 - 0
	G	.07	.05	.06	.07	.05	.05	.06	.06	.05 - .07
	O	.10	.10	.08	.07	.10	.09	.11	.08	.07 - .11
	L	0	0	0	0	0	0	0	0	0 - 0
	W	0	0	0	0	0	0	0	0	0 - 0
	S	0	0	0	0	0	0	0	0	0 - 0
	N	0	0	0	0	0	0	0	0	0 - 0
	D	.34	.33	.30	.32	.32	.34	.36	.34	.30 - .36
	P	.03	0	0	0	.01	0	.02	0	0 - .02
	I		CODE NOT USED IN OBSERVATIONS							
	T		CODE NOT USED IN OBSERVATIONS							
	NV	.08	.05	.05	.03	.05	.03	.08	.04	.03 - .08
Total Number of Frames		90	78	72	69	77	88	84	87	69 - 90

PERCENTAGE OF FRAMES IN WHICH EACH CODE WAS RECORDED
(March Testing)

Codes		Trainer	Individual Observers						Range for All Observers
			Obs. 1	Obs. 2	Obs. 3	Obs. 4	Obs. 5	Obs. 7	
Who:	T	.51	.49	.51	.50	.51	.50	.49	.49 - .51
	F	.29	.30	.28	.29	.28	.28	.28	.28 - .30
	M	.15	.14	.16	.15	.16	.15	.16	.14 - .16
	E	.05	.07	.05	.06	.05	.06	.06	.05 - .07
Whom:	T	.20	.21	.21	.22	.21	.22	.22	.20 - .22
	F	.38	.41	.37	.40	.39	.37	.38	.37 - .41
	M	.27	.26	.28	.26	.27	.26	.25	.25 - .28
	E	.15	.12	.14	.12	.13	.15	.15	.12 - .15
What:	1,1Q	.25	.23	.24	.23	.25	.24	.25	.23 - .25
	2	.01	.01	.01	.01	.01	.01	.01	.01 - .01
	3	.23	.22	.24	.24	.22	.24	.22	.22 - .24
	4	.26	.27	.26	.27	.27	.28	.26	.26 - .28
	5		CODE NOT USED IN OBSERVATIONS						
	6	.08	.09	.10	.08	.09	.10	.08	.08 - .10
	7	.06	.08	.06	.07	.07	.07	.06	.06 - .08
	8		CODE NOT USED IN OBSERVATIONS						
	9	.05	.06	.05	.05	.05	.06	.05	.05 - .06
	10	.02	.02	.02	.02	.02	.02	.03	.02 - .03
	11	0	0	0	0	0	0	0	0 - 0
	12	.04	.02	.02	.03	.02	.01	.04	.01 - .04
	X	0	0	0	0	0	0	0	0 - 0
How:	T		CODE NOT USED IN OBSERVATIONS						
	R/M	.93	.92	.92	.91	.91	.91	.93	.91 - .93
	B	.02	.02	.02	.02	.02	.02	.02	.02 - .02
	C	.01	.01	.01	.01	.01	.01	.01	.01 - .01
	G	.08	.06	.07	.08	.08	.08	.06	.06 - .08
	O	.04	.05	.06	.05	.04	.06	.05	.04 - .06
	L	0	0	0	0	0	0	0	0 - 0
	W	0	0	0	0	0	0	0	0 - 0
	S	.02	.03	.03	.02	.02	.02	.02	.02 - .03
	N	.01	.01	.01	.01	.01	.01	.01	.01 - .01
	D	.28	.27	.29	.28	.27	.28	.29	.27 - .29
	P	.03	.03	.03	.03	.03	.03	.03	.03 - .03
	I		CODE NOT USED IN OBSERVATIONS						
	T		CODE NOT USED IN OBSERVATIONS						
		.08	.07	.08	.06	.09	.08	.07	.06 - .09
Total Number of Frames		196	192	197	190	199	201	198	192 - 201

APPENDIX E

Intercorrelation Matrices of Observation Variables

INTERCORRELATIONS OF TEACHING PROCESS VARIABLES

	Teacher Directness - Academic Task											Placement of Students					Classroom Climate							
Teacher Directness--Academic Task	02	08	01	04	35	05	06	09	10	12	07	54	56	03	55	53	11	13	14	15	16	17	19	36
Large Group Instructions																								
02. Interacts with entire class, task		.93	-.31	-.63	-.62	-.26	-.69	-.53	-.56	-.11	-.49	-.58	.47	-.48	-.06	-.19	.05	-.23	-.09	-.25	-.25	-.14	-.57	-.29
08. Lectures or explains, task			-.36	.05	-.54	-.42	-.72	-.65	-.65	-.07	-.39	.63	.57	.42	-.16	.14	-.31	-.21	-.09	-.37	-.34	-.04	-.60	-.18
Individual Instruction																								
01. Interacts with mainstream student, task				.24	.40	.40	.48	.51	.61	-.03	-.81	.33	-.32	.34	-.14	-.05	-.05	.06	.10	.17	-.11	-.31	-.06	.36
04. Interacts with full-time student, task					.98	.37	.63	.65	.62	-.47	.61	.46	-.23	.05	-.09	-.34	.21	.02	.18	.08	.14	-.25	.25	.03
35. Interacts with individuals, task						.39	.68	.69	.72	-.45	.52	.51	-.30	.12	-.09	-.34	.15	-.01	.12	.06	.09	-.25	-.35	.04
Interactive Instruction																								
05. Ask question, task							.16	.66	.41	-.46	.16	.18	-.07	.26	.18	-.19	.32	.15	.24	.42	.14	-.57	.08	-.13
06. Offers help								.70	.76	-.06	.43	.79	-.70	.27	-.16	-.14	-.22	.13	-.06	-.02	.08	-.07	-.63	.18
09. Provides praise, acknowledgment, task									.69	-.46	.20	.56	-.48	.26	.07	-.12	.15	.05	.22	.42	.14	-.44	.15	-.02
10. Provides supportive corrective feedback, task										-.17	.19	.63	-.61	.41	.001	-.07	-.12	-.10	.04	.02	.07	-.21	-.40	-.02
Nondirected Instruction																								
12. Monitors students' seatwork, task											.05	-.15	.07	-.26	-.06	.34	-.34	.21	-.10	-.23	.05	.28	.24	-.27
07. Responds to students' question, task												.31	-.07	-.05	-.16	-.30	.29	.08	.11	.05	.52	.05	.52	-.10
Placement of Students																								
54. Places student at table with others													-.79	.28	.11	-.46	-.38	-.25	-.07	-.07	.07	.08	.69	-.05
56. Places student in teachers directed activity														-.25	-.31	-.12	.53	.03	.04	.07	.02	-.19	.52	-.003
03. Interacts with small group, task															-.08	.03	-.25	.19	.05	.02	.02	-.02	.24	.07
55. Places student in cooperative group situation																-.02	-.19	-.20	-.13	.29	-.001	.14	-.08	-.10
53. Places student at desk or table alone																	-.20	-.25	.02	-.07	-.15	-.15	-.12	.10
Classroom Climate																								
11. Provides nonsupportive feedback, task																		.18	.26	.52	.65	-.42	.34	-.09
13. Negative comments																			-.14	.04	.25	-.20	.18	.28
14. Positive comments																				.47	.29	-.35	-.27	-.08
15. Explains assignments organization																					.49	-.20	-.27	-.09
16. Specializes with students																						-.22	.13	-.02
17. Uninvolved with students																							.27	-.13
19. Behavior management																								.02
36. Praises for nonacademic behavior																								

Note - Underlining indicates $p < .05$.

INTERCORRELATIONS OF STUDENT BEHAVIOR VARIABLES

Involvement in Academic Instruction		Involvement in Academic Instruction								Social				Organizational		Affect		
		62	63	65	66	78	61	64	71	60	67	68	72	58	82	59	79	80
On-Task, Passive																		
57	Attends to class instruction, task	.09	-.05	-.40	-.27	-.10	-.83	.69	-.31	-.16	-.54	-.43	-.58	.01	-.03	.15	-.20	.05
Oral Participation Task																		
62	Responds to adults' questions, task		.31	.33	-.22	.99	-.15	.18	-.27	-.14	.15	.26	-.04	.07	-.02	-.14	-.26	-.19
63	Initiates comment to adult, task			.64	-.02	.38	.05	-.18	-.16	.27	-.04	.28	-.09	-.12	.11	.12	.10	.24
65	Asks for help, task				.08	.36	.17	-.16	.05	-.01	.38	.72	.35	-.10	.19	-.09	-.13	-.08
66	Interacts with other students, task					-.21	.42	-.16	-.29	-.03	-.01	-.27	.57	-.08	-.05	-.19	.003	-.03
78	All responses and comments to adult, task						-.15	.17	-.27	.19	-.21	.26	-.06	-.34	-.02	-.14	-.26	-.18
On-Task - Independent																		
61	On-task seatwork							-.60	-.17	.26	.35	.04	.51	.07	-.08	-.13	.22	-.37
Off-Task																		
64	Does not respond to adults' questions, task								-.30	-.07	-.43	-.17	-.44	.09	-.12	.22	-.23	-.16
71	Uninvolved									-.20	.14	.32	-.04	-.02	-.14	.05	.10	.06
Social																		
60	Attends to group interactions, social										.06	-.07	-.07	05	-.09	.68	.64	.40
67	Initiates interaction with other students, social											.63	.80	-.28	.12	-.11	.003	-.12
68	Interacts with adults, social												.36	-.05	.40	-.11	-.11	-.16
72	All interactions with other students													-.24	.06	-.26	-.11	-.15
Organizational																		
58	Attends to group instruction, organization														-.19	.02	-.03	.08
82	Gets instructional materials organized															-.19	-.003	-.10
Affect																		
59	Attends to group behavior corrections																.77	.49
79	Negative interactions																	-.49
80	Positive interactions																	

Note - Underlining indicates $p < .05$.